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Empathy and Biofeedback: A Critical Analysis Through the Lens of Epistemic Injustice

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INTRODUCTION

Throughout this thesis, I will discuss the reasons why my vision of the newest technologies in biofeedback treatment in psychotherapy is very critical. These technologies aim to operationalize some notions – including empathy – owning so many facets I am not sure they can be fully operationalized or operationalized at all: my main criticism will be led by the theory of epistemic injustice. Following my purpose, I have chosen to start with an analysis of the literature on empathy, central to this work. This concept is tightly bonded to the theorization of mirror neurons, deeply connected to the mind-body relationship and therefore to the theory of embodied cognition. Biofeedback research relies on the assumption that body movements reflect the mind's movements: this holds partially true as I aim to show throughout this thesis, but has some implications such as creating epistemic injustice as defined by Miranda Fricker (2007) mostly in the clinical context. This is the lens I will adopt to critically analyze the latest frontiers in biofeedback technology, such as the branch of interpersonal synchronization from which derived interpersonal biofeedback techniques.

The moment empathy was born is defined through the scholars and clinicians who started using it in their daily practice, then defining it through their own words. If defining empathy is challenging, finding an innovative way to operationalize it has been at the center of the discourse in the past seventy years, since A. Di Mascio and colleagues tried to collect patterns of physiological coordination in the Fifties. The research on physiological synchronization started there. There are no clear definitions of the physiological mechanisms underlying most emotions, and there is uncertainty about what the developed tools measure in clinical practice. Nevertheless, scholars have tried to find which mechanisms match emotions in people's perception and what part of perception is "shared" between dyad participants. I argue, in agreement with some authors (e.g., Adler, 2007), that the necessary disparity in psychotherapy cannot let an equal shared dimension happen. That is why epistemic injustice is a frequent phenomenon and an important risk to consider when receiving patients' narratives.

All the questions listed above led me to structure this thesis starting the first chapter with an analysis of the most prominent contribution to the development of the concept of empathy, including a brief breakdown of its popularity and its first conceptualizations: first Daniel C. Batson's, then Vittorio Gallese & Alvin Goldman's, finally Robert Blanchet's. Following this first exploratory part, an analysis of clinical psychology will take place, opening with the definition given by Jodi Halpern, exploring then other authors' positions, and attempting to summarize

the main psychotherapy schools' visions on empathy throughout history: psychoanalytic, client-centered, and self-psychology therapies will be compared. I will then move to list some "dark sides" of empathy and define emotion-focused therapy's vision on it. In the last section of Chapter 1, I will introduce in detail what is epistemic injustice and how it is a central matter in the research on the use of empathy in psychotherapy.

Moving on to Chapter 2, I will describe what is biofeedback and its several uses in the clinical context, including some "nontechnological" forms of biofeedback - such as mindfulness - and how the classical definitions of biofeedback could be overcome. The role of Interpersonal Physiology (IP) will be explored through two brilliant and recent reviews on the field, both from 2017: the one by Richard Palumbo and colleagues (2017) and the systematic review of the state-of-the-art by Johann Roland Kleinbub (2017). The many difficulties in defining interpersonal physiology will be explained, together with some correlates of Physiological Synchronization (another name for IP) in literature. Palumbo and colleagues specify that from the original studies by Di Mascio (1955) until nowadays, researchers have considered the possibility that experiential connections that define emotional empathy are mirrored in physiology: nevertheless, there are no studies from 1955 until now that confirm the direction and valence of this statement. Even though many studies – first among the popular studies by Carl D. Marci's team starting in 2005 – have found a correspondence between reported empathy and physiological variables, the studies presented until now present many limitations. The theorization of embodied cognition will represent the theoretical bridge between the main topics of Chapters 1 and 2.

In the last chapter, I will dig deeper into the critical link between empathy and physiology in psychotherapy. I will start from the first studies by Marci and colleagues, moving to a critical consideration of embodied cognition and the so-called second-person approaches to empathy based on Gallese's works. I will argue that a complete and suggested embodiment of the other's own embodied cognition results in being either impossible or flawed (often with epistemic injustice). Through the studies by Travis J. Wilthshire and colleagues and the measures of electrodermal activity (EDA) in clinical dyads by Irene Messina and colleagues, both brilliant and promising, I will then move to the interpersonal physiology of empathy, as to say the idea that empathic mechanisms have clear physiological foundations: hard to prove because of the multitude of confusing variables and terminology considered through the first 2 chapters, to which the extreme difficulty of sustaining studying in ecological contexts. In the final section of Chapter 3, the most innovative models for biofeedback therapy are analyzed: interpersonal biofeedback is the last-generation biofeedback and few models of its use and conceptualization have emerged in the past ten

years. I will first describe The Attachment-informed biofeedback model by Yossi Ehrenreich et al., then the dyadic biofeedback model by Nava Levit Binnun et al., and finally an interpersonal biofeedback model adapted for psychodynamic therapy presented by Kleinbub and colleagues.

I have reasons to believe that we are moving towards new technologies to insert in the clinical context without considering a long series of epistemic “dark sides” of our work. I am sure we will never be able to solve every mystery and variable connected to how empathic interactions work, but since we know for sure that empathy is one of the main variables in psychotherapy outcomes, some caution should be put – in my perspective – to figure out how the consensus of the patients and asymmetry affect the clinical encounter. This is why I chose to use the epistemic injustice lenses as my main criticism towards these systems: I strongly support the use of new devices in therapy but the aim should be to fill some gaps between therapists and clients, not to enlarge them. I want to point out how epistemic injustice’s effects could be enhanced when the use of these devices mediates the interaction: scholars like Vittorio Gallese have embraced embodied cognition and most of the biofeedback research hooked onto his theories to develop new tools, but contradictions are too many to be ignored. I will try to give a critical overview that – based on my current knowledge - does not exist in literature yet and I feel it is necessary. The purpose of this thesis is neither to stop nor slow down the research on physiological substrates of empathy, but to support its critical development considering one more – central – variable: the patient's epistemic authority in the clinical encounter.

CHAPTER 1: WHAT IS EMPATHY

1. Introduction

In this first chapter, I will define empathy and the major contributions that helped to define it throughout the last century and the past two decades: starting from the critical discovery of Mirror Neurons in 1992, I will move on to some - I argue - interesting but inconcludent disputes regarding what empathy is and what it is not. Brilliant scholars have attempted to give each one a different definition of this enigmatic concept, but no one has dominated the discussion. Further in the chapter, I will explore how empathy entered the clinical encounter in medical and psychotherapeutic settings, reviewing how psychology approached empathy and what is going on nowadays in the clinical context. Various issues will arise, but the one of epistemic injustice is going to be of central importance: at the end of the chapter, in fact, I will report some scholars' studies on how to overcome the epistemic injustice patients face in the clinical encounter with their physicians but, most importantly for the purpose of this thesis, with their psychologists or psychotherapists.

1.1 Defining empathy is a problematic work.

According to Karsten Stuebert, “the concept of empathy is used to refer to a wide range of psychological capacities that are considered central for constituting humans as social creatures allowing us to know what other people are thinking and feeling, to emotionally engage with them, to share their thoughts and feelings, and to care for their well-being” (Stueber, Karsten, “Empathy”, *The Stanford Encyclopedia of Philosophy* (Fall 2019 Edition)). It is well known that, before Edward Titchener (1867–1927) introduced the term “empathy” at the beginning of the 20th century as the translation of the German term “Einfühlung” (which can be also literally translated as “feeling into”), “sympathy” was the term commonly used to refer to empathy-related phenomena. That is how, among philosophers, coming to feel as the other feels has mainly been called (see Hume, 1740/1896; Smith, 1759/1853). Psychologists have then claimed other alternative definitions for these psychological phenomena, such as “emotional contagion” (Hatfield, Cacioppo, & Rapson, 1994), “affective empathy” (Zahn-Waxler, Robinson, & Emde, 1992), and “automatic emotional empathy” (Hodges & Wegner, 1997). Nowadays, empathy is commonly understood as intertwined with human nature and how humans bond with each other, but in practical terms, there is no agreement regarding a common definition of it. This disagreement has led to great confusion surrounding the definition of the term empathy itself, whilst providing every professional a great definition suitable for their work practice. Following De Vignemont and Singer’s statement, “It can be claimed that there are probably nearly as many definitions of empathy as people working on the topic” (de Vignemont & Singer, 2006). Therefore, the aim of this chapter is not to disentangle all the facets of empathy in order to find an

allegedly “correct one”, but to argue that if every practitioner or researcher followed a different definition, then interdisciplinary work on empathy would extinguish fast and anything could be interpreted based on one’s personal or overspecialized definition; moreover, reviewing the whole state of the art would be impossible, unless one reviews only articles whose authors claim to be about empathy, as Hall and Schwarts did in 2019. Despite their review that examined 393 studies published between 2001 and 2013, they still came to the conclusion that “the field is not conceptually coherent” (2019), increasing the awareness that previous studies have not followed any shared operationalization or conceptualization process. In order to avoid extra-subjective interpretations, in the following paragraphs I will show how some relevant definitions found in the recent scientific literature can help us cross the bridge between the theoretical usage of empathy and its operationalization.

1.1.1 The rising popularity of empathy

Although the term empathy has been used in philosophy and phenomenology for more than a century, we could claim that a cornerstone in scientific research on empathy has been the game-changing discovery of mirror neurons (MNs), i.e., motor neurons that not only respond to the execution of movements and actions but also during their perception when executed by others (Gallese, 2018). Mirror neurons, which are activated by visual stimuli, necessitate an interaction between the agent (human or monkey) performing an action and the object involved. Experiments revealed that merely observing the agent or the object alone did not trigger the neuron’s response. Mimicking the action without a target object or using tools to perform the action also proved less effective. The proposal is that mirror neurons may constitute a neural mechanism facilitating implicit action understanding (Gallese et al., 1996; Rizzolatti et al., 1996). Recent brain imaging studies such as the one performed by Buccino and colleagues demonstrated that when observing goal-related behaviors performed with different effectors, distinct sectors of the premotor cortex became active, mirroring the activation during the actual performance of those actions (2001). Thus, perceiving an action involves an internal simulation, which activates the observer’s motor circuits as if they were executing the observed action. This perspective suggests that implicit action simulation establishes a direct link between the agent and observer, contributing to the formation of social bonds. Mirror neurons create a multimodal representation of organism-organism relations, blending spaces inhabited by various actors into a unified intersubjective space.

The proposal extends to the idea that a similar mechanism underlies our ability to empathize with others’ feelings and emotions, suggesting that mirror-matching mechanisms enable the implicit understanding of displayed sensations and emotions. The subpersonal level involves mirror-matching

neural circuits linked to changes in body states, forming a supramodal intentional shared space. Analogous neural networks might generate emotional and sensitive shared spaces. These shared spaces facilitate the implicit understanding of others' emotions and sensations, fostering mutual intelligibility without implying that others are experienced as oneself (Gallese, 2003). The possession of a “mirror matching mechanism” in individuals serves a crucial purpose in adapting to specific social environments. The ability to select and exhibit certain types of behavior is established by understanding the behaviors demonstrated by others. The proposed explanation is that action understanding heavily depends on a neural mechanism that aligns, within the same neuronal substrate, the observed behavior with the one executed (Gallese et al., 1996a; Rizzolatti et al., 1996a; Gallese, 2000a). According to this hypothesis, ‘understanding’ occurs by modeling a behavior as an action with the assistance of a motor equivalence between what others do and what the observer does.

In essence, the mirror-matching mechanism enables individuals to comprehend and interpret actions by establishing a neural link between observed behaviors and their own motor representations. Gallese proposes that also sensations, pains, and emotions displayed by others can be empathized, with and therefore understood, through a mirror-matching mechanism (Gallese, 2001).

After the MNs serendipitous discovery by the équipe of Giacomo Rizzolatti in the University of Parma in 1992, the popularity of empathy has risen in the past 30 years, spreading to every discipline, from arts and psychology to medicine, engineering, and many others. The evidence of some neural correlate to explain how we imitate others was suddenly connected to empathy and social life, trying to understand deeply why and how we perceive our conspecifics. A couple of examples of the growing research interest in the topic can be found using Medline Trend – a tool that calculates the number of studies published in PubMed by topic – shows us an increasing popularity of the study of empathy: if in 1980 the papers were “only” 101, in 1990 the number had more than doubled to 217, reaching 435 in the year 2000 (first data after MNs discovery) up to 2775 papers present on PubMed in 2021 (year of the latest data recorded by the platform). More broadly, on Scopus.com clicking “analyze results” when searching for the term “empathy”, 61345 documents are shown, till December 2022. Moreover, on Scopus we can find the same documents divided by area of application or research: medicine is leading with 26% of the papers published on the subject in the last hundred years, even though it could be counterintuitive; indeed, someone would have guessed social sciences (ranking second in picture 2 below) to be in a pole position, together with psychology (third with 16,6% of the total). Disparate research fields have tried to dig deeper into empathy, including engineering (1,9 percent of the total), and biochemistry (1,6%). These data could be sterile without adding that it is visible, from the rising popularity of the concept throughout the years and among

multiple fields of research, how empathy has spread, from a lab at the University of Parma to becoming an extremely popular concept globally (Fig. 1 and 2).

Documents by year

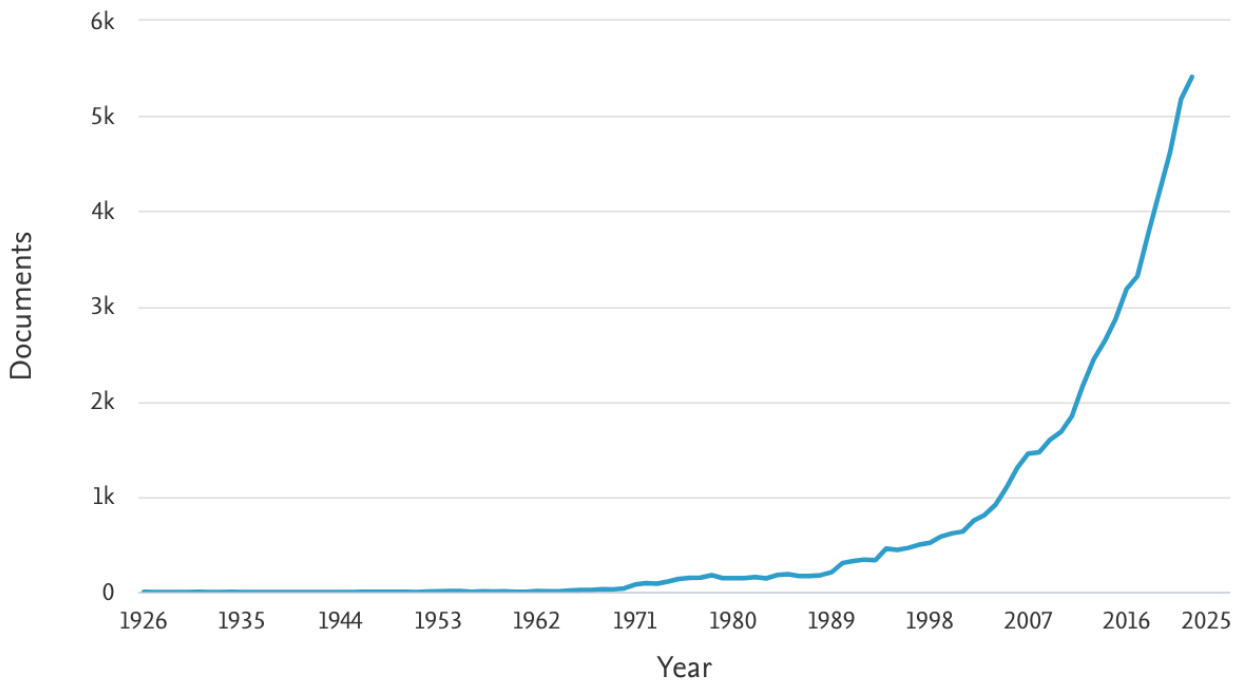


Figure 1; Publications on empathy by year on Scopus (1922-2022), analysis of the results searching for “empathy” with no other filter ([link](#)).

Documents by subject area

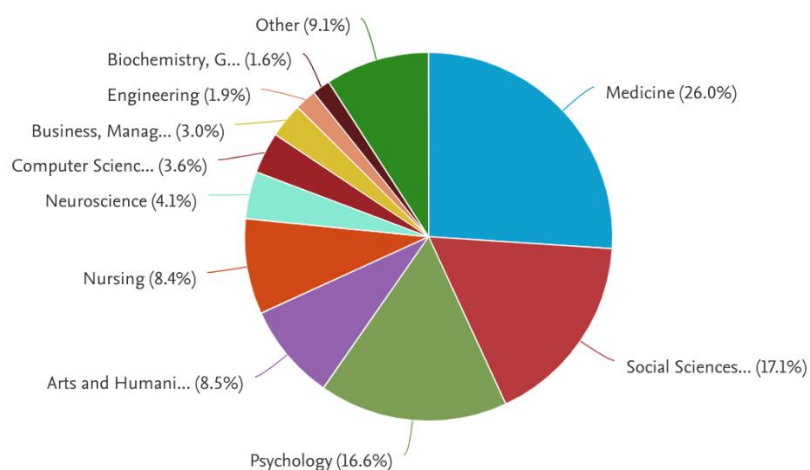


Figure 2; Publications on empathy by subject area on Scopus (1922-2022), analysis of the results searching for “empathy” with no other filter (<http://bit.ly/3Mf7k97>).

1.1.2 Batson's attempt to conceptualize empathy

Although mirror neurons' discovery had a huge impact on our knowledge of how empathetic mechanisms work, they are not enough to fully explain empathy. For example, it is still not fully clear what causes one to react to another's suffering with compassion and sensitivity. Daniel Batson tried to answer questions like this one, with the aim of "reducing confusion by recognizing complexity" (p. 8, 2009), by conceptualizing eight phenomena of empathy, among the many that he claimed to be relatable to the same concept (Batson, 2009):

1. Cognitive empathy: knowing someone else's internal state, including their thoughts and feelings.
2. Facial empathy: adopting the posture or matching the neural responses of an observed other. This concept had been previously called "facial empathy" by Gordon (1995), or "motor mimicry" (often automatic imitation of the gestures, mannerisms, and postures of the other) by Dimberg, Thunberg & Elmehed (2000) and Hoffman (2000). "Imitation" is another term that brings up this same concept (Lipps, 1903; Meltzoff & Moore, 1997; Titchener, 1909).
3. Coming to feel as another person feels like.
4. Intuiting or projecting oneself into another's situation.
5. Psychological empathy, projection, perspective taking, imagining how another is thinking and feeling.
6. Imagining how one would think and feel in another person's situation: Adam Smith termed this act as "changing places in fancy," while Mead referred to it as "role-taking" or "empathy." Povinelli labeled it as "cognitive empathy," and Darwall introduced the terms "projective empathy" or "simulation." In the Piagetian tradition, this involves either "perspective-taking" or "decentering" (Piaget, 1953). Stotland coined it as an "imagine-self" perspective, distinguishing it from the imagine-other perspective mentioned in Concept 5. Although empirical evidence suggests otherwise, these perspectives are sometimes confused or equated even though they have clear differences. (Batson, Early, & Salvarani, 1997; Stotland, 1969). Adopting an imagine-self perspective is akin to projecting oneself into another's situation (Concept 4), but they were developed independently in distinct contexts.
7. The state of distress experienced when witnessing another person's suffering. This emotional reaction, termed "empathy" by Krebs (1975), "empathic distress" by Hoffman (1981), and "personal distress" by Batson (1991), involves feelings of anxiety and unease provoked by observing someone else's upset state. Importantly,

this state does not entail feeling distressed for the other (as in Concept 8) or distressed as the other (as in Concept 3) but rather feeling distressed by the other's condition.

8. Feeling for another person who is suffering, and in contemporary social psychology, the terms "empathy" or "empathic concern" are often used to describe this other-oriented emotional experience. The response elicited by and congruent with the perceived welfare of someone else is the focus here. The focus of emotion is other-oriented, and "congruent" relates to the welfare (positive or negative) of the emotion of the other and not to the content, distinguishing it from Concept 3. For instance, one might feel sad or sorry for a friend who is scared and upset. Emotions felt for another when they are perceived to be in need have not always been labeled as empathy; alternative terms include "pity" or "compassion" (Hume, 1740/1896; Smith, 1759/1853), "sympathetic distress" (Hoffman, 1981, 2000), and simply "sympathy" (Darwall, 1998; Eisenberg & Strayer, 1987; Preston & de Waal, 2002; Sober & Wilson, 1998; Wispé, 1986).

Before Batson's conceptualization, Preston and de Waal (2002) proposed "a unified theory" of empathy, focused on mimicked neural representations, the neural activations of the observer specular to those of the agent they are observing. The issue is that, whether matched or not, the latter does not always and automatically lead to feelings. Matching neural representations or mimicking another's posture (concept 2) may facilitate understanding of, or belief about, another's state (concept 1: Knowing Another Person's Internal State, Including His or Her Thoughts and Feelings) and thereby induce other-oriented feelings (concept 8: Feeling for Another Person Who Is Suffering). Even if you react crying, mimicking your friend's condition, it seems unlikely that it is necessary or sufficient to produce feelings. Most likely, their tears showed you how upset they were, and that you are crying because you feel sorry for them (Batson, 2009). Following Batson's aim of "reducing confusion by recognizing complexity" (2009, p. 8), my claim is that, although the physiological substrates of empathy are fundamental to understand how our brains and generally how human animals interact with one another, it is worth exploring how empathy acts on an emotional level, as this seems to be lacking in the definitions and studies I have highlighted above.

1.1.3 The dual nature of empathy: egocentrism vs allocentrism

On the one hand, Gallese and Goldman started theorizing the Simulation Theory (ST) and talking about "mind reading" (1998), hypothesizing that they could at least find the precursors to such a process: "Mind-reading is the activity of representing specific mental states of others, for example,

their perceptions, goals, beliefs, expectations, and the like. It is now agreed that all normal humans develop the capacity to represent mental states in others, a system of representation often called folk psychology” (Gallese and Goldman, pag. 495, 1998). As Barlassina and Gordon argue, “[s]imulation theorists conceive of our ordinary mindreading abilities as an ego-centric method and as a “knowledge-poor” strategy, where I do not utilize a folk psychological theory but use myself as a model for the other person’s mental life” (Barlassina and Gordon, 2017). Their analysis of why we developed our mind-reading skills is framed in an evolutionary perspective, suggesting that reading others’ minds could be helpful as an anticipatory strategy of their future actions, getting to know whether they will be cooperative or not. Gallese and Goldman define mind reading as “incorporating an experient to replicate, mimic, or impersonate the mental life of the target agent” (pag. 497, 1998). On the other hand, Blanchet has provided a recent antithesis to simulation theory (ST) in 2019 with the ‘third-person account of empathy’ theory, in which he suggests that empathy and sympathy are not two independent other-directed feelings: the author, instead, supports the idea that sympathy and antipathy rely on empathy for their emergence and intensification, coupled with the desire for the other person’s well-being or misfortune. He clarifies that he is not asserting that traditional empathy is a prerequisite for sympathy but emphasizes the need for a different definition of empathy when directed towards a person or a fictional character. Blanchet, unlike Gallese and Goldman, advocates for the idea that no imaginative act is involved in the empathetic process: empathizing just means focusing one’s attention on the concerns of others. No pretending, imagining nor picturing is involved. Indeed, according to Blanchet (who uses people’s sentiments toward fictional characters to fairly explain his point), “We move our own concerns into the background and focus our attention on how the fictional states of affairs affect the characters’ concerns” (2019). Looking at any situation from another person’s point of view, we can make inferences about what the other person is feeling (e.g., that a boy will miss his mother if she dies because he wants her care and company). From the author’s perspective, empathy simply consists of stepping out of one’s egocentric point of view on the world and focusing attention on the concerns of another: we are faced with an allocentric interpretation of empathy. Blanchet proposes a pluralistic account of empathy, sympathy, and well-being, according to which we can empathize with other individuals on three levels: (1) the level of their preferences alone, (2) the level of their preferences and feelings, and (3) the level of the objective needs of the other. The advantage of a pluralistic view is that it explains straight away why we think of empathy as something that is morally valuable: it is directed toward others, not toward our own needs. Simulationist definitions of empathy, in contrast, have a harder time accounting for this intuition since their core criterion for empathy is as sustained by Blanchet (2019) “just another form of egocentrism” (pag. 756) A third perspective, which has gained some prominence in recent years,

is the direct perception theory of empathy (e.g., Zahavi and Overgaard, 2011; Zahavi 2014, 2017; Gallagher 2017; Jardine and Szanto 2017), or what one might also call “the phenomenologist account of empathy” (Blanchet, 2019). According to this view, “empathy involves no isomorphic feeling, states or simulation, but rather is constituted by the supposed fact that we can directly perceive other people’s intentions, emotions, and possibly other mental states in their expressive behavior” (Blanchet, 2019).

1.2 From empathy to clinical empathy

The allocentric perspective by Blanchet presented in paragraph 1.1.4. serves as an alternative from the egocentric perspective on empathy and shows how it is not necessary to “wear someone else’s shoes” to manage to support them. Following his theory, people wouldn’t picture themselves in someone else’s place but imagine how the person who’s opening about their feelings is feeling, allowing us to focus at their concern and not at our projection of ourselves in their specific situation. One could argue that this could not be the best way to deal with others’ life issues in daily life, but it could be a starting point to pay more attention to others’ rather than to our own needs.

Hypothesizing the case of a clinician (either a medical doctor or a psychologist), all three levels of interpretation proposed by Blanchet are to be considered in the professional setting. Moreover, integrating Batson’s attempt to conceptualize empathy, questions come up on the way a physician or a psychologist should apply empathy. Clinical practice is, *per se*, revolving around the client, but it is of course no stranger to the influence of the practitioner. What is, then, required of a clinician who’s practicing empathy, and most importantly what is clinical empathy? To answer these broad questions, some more specific questions could be asked, such as those expressed by Jodi Halpern: “We should develop a research agenda to study ‘empathies’ in different contexts depending on: what is the clinical focus (performing surgery, giving bad news, encouraging weight loss); what cultural/historical factors including previous medical experiences shape the expectations of both patients and physicians; what is the evolving tone of this specific clinical interaction?” (Halpern, From idealized clinical empathy to empathic communication in medical care, 2013).

Halpern’s first attempt to answer these and many other questions can be found in her 2003 paper named “What is clinical empathy?”. Throughout the evolution of her thoughts, she supports the idea that in the medical field researchers and physicians are too focused on giving labels to patients’ sufferings rather than affectively and effectively recognizing their feelings (Halpern, 2003; Halpern, 2013). An eminent group from the Society for General Internal Medicine in 1999 defined empathy as “the act of correctly acknowledging the emotional state of another without experiencing that state oneself.” (Markakis K, 1999). Jodi Halpern engages the idea that empathy is more of an intellectual

way of gaining knowledge of the other rather than an emotional one, otherwise being empathically engaged with each patient, and experiencing their emotions, would be “absurdly demanding (even for psychotherapists)” (Halpern, 2003). Introspecting oneself (the clinician) while listening to a patient would take the focus away from the attention required for empathy. Being emotionally attuned means imagining what the other is going through, and while this happens physicians could fall into resonance. This is a kind of involuntary activity, described by Halpern, as not being a professional skill, but a part of basic communication: in fact, this does not always involve strong feelings but a nonverbal sense that allows the physician to map where the person is emotionally. Nevertheless, clinical empathy is distinguished by the intentional use of this experiential input for cognitive aims. Affective resonance or feelings of concern reflectively need to be in the service of better understanding and communicating with the patient. In Halpern’s theorization, “[e]mpathy has as its goal imagining how it feels to be in another person’s situation” (2003, p. 671). During ordinary clinical interactions, physicians should use their skillful attunement. In one of her following papers, Halpern assumes a two-fold goal of clinical empathy: understand the patient’s experience as much as needed to be effective in the treatment – cognitive goal – and communicate successfully aiming at building therapeutic alliance – communicative goal. The overlapping aim is treating the person’s issue efficiently. She argues for engaged curiosity, in which the “clinician’s cognitive aim of understanding the patient’s individual perspective is supported by affectively engaged communication” (Halpern, 2013). Observational studies show that patients give more information to emotionally attuned physicians than to those who ask good questions but are not emotionally engaged. While the experience of empathy is not under our direct control, clinicians can actively cultivate empathic practices, depending on the “empathies” specifically requested in the context that would improve clinical care. Halpern suggests that in most cases, it’s better to engage in limited or partial empathic engagement. The percentage of emotional, cognitive, or communicational empathy involved in the patient-clinician interaction is unique and doesn’t need to be proportionate or symmetrical every time: for instance, during the first exploratory sessions of a psychotherapy path, more cognitive communication could be required to collect personal data such as date and place of birth rather than emotional one, needed when the patient is crying;; moreover, communicative empathy could be used when the patients ask direct questions regarding their symptoms to understand their personal perspective. Physicians talk to so many patients that they will inevitably make communication mistakes, yet they can still develop a therapeutic alliance by showing their interest in the patient’s point of view: this interest could be labeled as engaged curiosity, especially important in emotionally distressing situations. Emotions, as claimed by Halpern, are not only embodied perceptions but implicit judgments, that can tell physicians about themselves just as much as about the patient they’re

listening to: practitioners need to use their own negative emotions as clinical cues, time to time essential to understand what the patient might be feeling. Engaged curiosity includes both one's feelings and the other's, and it depends on brain pathways for cognitive empathy, but also engages affective pathways. The author provides the example of a therapist who feels ongoing hopelessness or frustration towards a patient, therefore she considers possibilities including whether the patient might feel similar or complementary feelings. (Halpern, 2013).

An extremely diverse Theorization is sourced in Howard Spiro and colleagues' work: they sustain the idea that in clinical settings – mostly medical ones – “You and I” becomes “I am you” or “I could be you” (Spiro, 2009). For clinicians, empathy should consist of identifying with the person suffering in front of them, a sort of fellowship, if you will, generated by interactions with the patients. The authors recognize a struggle in defining empathy, claiming that the borders between empathy and sympathy are blurry. They support the idea that the contrast between the two concepts is that sympathy requires compassion but not passion” (Spiro, 2009).

E. Gleichgerrcht and J. Decety have identified three components of empathy that can be put into practice in clinical settings. The first component, called empathic arousal, emerges during ontogeny. It refers to “an explicit mental representation of the emotional state of another person.” (Gleichgerrcht & Decety, 2013). Secondly, empathic concern refers to other-oriented emotion felt for someone in need, which produces motivation to better the other's condition. Finally, emotion regulation enables the control of emotion, affect, drive, and motivation. They can be analyzed separately, although in fact they're deeply intertwined and cooperate in the whole experience of empathy. (Decety J, 2004); (J, 2011); (Gleichgerrcht, 2013).

Jamil Zaki and colleagues tried to find a correspondence between the clinician's experience of the person's emotions - affective empathy, discussed above - and empathic accuracy: clinicians' ability to accurately assess the person's emotions. Their work showed some predictors of this effect, finding that the patients' (from here named “targets”) expressivity generally predicted empathic accuracy. When targets were low in expressivity the empathic traits of the clinician (here named “perceiver”) were unrelated to empathic accuracy. On the contrary, when the targets were highly expressive, the perceiver's traits did predict accuracy. Modeling the interpersonal dynamics that predict empathic accuracy could prove useful to understanding numerous situations involving inferences about nonstrangers, such as communication between close relationship partners or dyadic interactions between therapists and clients. This encourages a reconsideration of the utility of trait-based empathy measures in anticipating empathic conduct. The present findings indicate that these measures can indeed forecast behaviors related to empathy, but their effectiveness becomes apparent

only when considering the expressive cues of the individuals being observed and adopting an interpersonal viewpoint in understanding empathic processes (Jamil Zaki, 2008).

Inspired by Halpern's vision on empathy, I have analyzed Zaki's, Gleichgerrcht & Decety's and Spiro's visions critically: the latter sustains a kind of unidirectional empathy that can be dangerously interpreted as a fusion between clinician's and patient's states of mind. I believe that this could lead to a wildly variable experience: as Halpern highlights "[e]motions are generally outside people's immediate control. How can physicians reliably empathize with patients toward whom they naturally feel little or even negative emotions?" (Halpern, 2003; p. 673). I find interesting how Gleichgerrcht and Decety underlined the importance of emotional regulation as an essential element of their theorization, *conditio sine qua non* for the experience of empathy. Garden (2008) recommends integrating empathy into clinical practice, drawing inspiration from Halpern's insights. Halpern advocated for interchangeable use of pronouns, switching continuously from a first-person point of view - such as "I" - and a third-person one - "he" - to engage with patients' emotions directly, discouraging the adoption of a detached perspective. Emphasizing the significance of cultural humility – which can be defined as constant self-questioning and desire to learn from others - Garden underlines that cultivating empathy requires a reflective, patient-centered approach. Despite its potential therapeutic benefits, clinical empathy, grounded in the empathizer's experiences and imagination, carries the risk of unintentionally overlooking patients and their pain. Acknowledging a broader perspective, an enhanced empathy model could extend beyond emotional connection to encompass context-oriented actions. This expanded approach may offer a more comprehensive response to structural issues within healthcare, including social determinants of health and power dynamics in clinical settings (Garden, 2008).

1.2.1 Empathy's historical background

While clinical empathy is important in psychoanalytic, self-psychological, and client-centered therapies, its primary function is seen as different in each approach. Based on Arthur C. Bohart's work, for client-centered therapy, the major function of empathy is to create a certain kind of learning experience through which clients come to live and relate to themselves differently. Specifically, it is to help people develop the competence of learning to use experiential referents in daily decision-making processes. For psychoanalysis, empathy is claimed to be used primarily to help the therapist (and later clients) develop insight into the patient's unconscious dynamics. For self-psychology, empathy functions to strengthen self-structure. The author advocates these three different functions not to be compatible (Bohart, 1991). In this section, I will start defining empathy for psychoanalytic literature and then move forward to compare it first to client-centered approaches to therapy and then

compare the latter to the self-psychology approach, to gain a more complete overview of the role played by empathy within therapeutical journeys, detaching from what the “classic” clinical empathy definition is, as I consider it to be deeply connected to a more medical perspective of the clinician-patient relationship, rather than the psychological one that I would rather adopt here.

1.2.1.1 Psychoanalytic background of empathy

Psychoanalytic contribution toward a definition of empathy has been explored by Renuka M. Sharma in 1992, in a retrospective article regarding the evolution of the concept (Sharma, 1992). Therefore, I would like to draw on her review to highlight how empathy has evolved throughout psychoanalytic literature, since its general acceptance in a clinical context happened by 1932. Among the first 32 years after 1932, the “Psychoanalytic Quarterly” recorded only one citation on empathy. By contrast, from 1967 to 1980, empathy was referenced 23 times: its importance could then no longer be ignored. Sigmund Freud initially introduced the concept of “tact” in the context of a therapist’s listening approach within psychoanalysis (Freud, 1922). This concept evolved into the idea of “evenly suspended attention,” fostering an environment conducive to free association. (Sharma, 1992) Wilhelm Fliess and Sándor Ferenczi further expanded on this notion (Fliess, 1942; Ferenczi, 1928). Freud, regarding empathy, characterized it as a unique form of communication, emphasizing its significant role in comprehending elements inherently foreign to our own ego in other individuals (Freud, 1922).

Although Freud refrained from directly employing the term “empathy” due to its association with aesthetics during that period, it is noteworthy that numerous key psychoanalytic concepts outlined by Freud seem crucial in understanding empathy. As brilliantly exposed in Lou Agosta’s book “A Rumor of Empathy: Rewriting Empathy in the Context of Philosophy” (2014), two reasons explain why Freud self-imposed limitations on the use the word “empathy”: the author explains how (1) Freud did not want to be regarded as a follower of Lipps; (2) Freud’s definition of introspection remained unrelated to empathy, and introspection is the royal road to empathy. Although Freud never uses empathy in the sense of Lipps’ “projective aesthetic empathy,” Freud’s use of empathy is aesthetically relevant because humor, art appreciation, and empathy are transformations in the psyche” (Agosta, 2014, p.66). Another fun fact emerges from his article: the author underscores how the term “Einfühlung” - empathy - was mistranslated by the translators employed to transcribe his written works. As Agosta reports: “In translating “Einfühlung” from the original German, Alix Strachey” - translator - “writes to James Strachey” - second translator - “: “In any case, it’s a vile word, elephantine, for a subtle process.” The words “sympathetic understanding” were chosen as the translation in this case” (Agosta, 2014, p. 69; see Strachey and Strachey [1986] cited in Pigman

[1995]). In summary, Agosta concludes by stating that two are the main reasons there has been an ongoing debate on Freud's use of empathy: 1) it's worth noting that Lipps' concept of "Einfühlung" or "empathy" held a significant position in psychological theory, largely monopolizing the discussion. Any mention of empathy required a reference to Lipps, which Freud, committed to maintaining the independence of psychoanalysis, refrained from doing. Even as early as 1898, in his correspondence with Fliess, Freud demonstrated his dedication to charting his own course, integrating insights from various sources without tethering himself to any particular authority. 2) another reason for Freud's limited explicit discussion of empathy lies in his definition of "introspection." While empathy and introspection are related concepts, Freud's conception of introspection differs markedly from contemporary views such as Kohut's definition of "vicarious introspection" (1959), where introspection is the main to empathy. Freud's understanding of introspection centers on self-observation guided by conscience, specifically as a means of self-critique and censorship (Agosta, 2014)

Moving on throughout Sharma's retrospective, the author shows how Theodor Reik and Wilhelm Fliess' conceptions of the processes connected to empathy are at times overlapping. Specifically, Reik develops the process in three stages: 1) first comes the observation of both conscious and unconscious processes by the practitioner: emotions similar to the patients' ones are stimulated in the clinician. These emotions or affects then form the basis of a cognitive inference about the patient's state and at the same time the affect is introduced into the ego of the analyst; 2) unconscious assimilation: an unconscious resonance within the inference about affect. Reik stated that this process of knowing the other wouldn't find its origin in identification, in contrast to Fliess's belief, but rather in an affective response within the therapist. Reik then advances the projection of this self-representation onto the patient, after stating that introjection was induced by the patient. Consequently, anything that could be returned during the therapeutic process was deemed to be inherently characteristic of the patient from the beginning; 3) conscious assimilation of the inference, or conjecture. Even though Reik seems to be proposing both an affective experience to this process of knowing as well as an understanding of countertransference, the role of mental representation and object relations remains undefined (Fliess, 1953).

Fliess includes in empathy two processes: projection and introjection. While he outlined four stages of empathy, it seems that he was actually delineating two distinct types of processes; the first is a "taking in" of an aspect as part of the patient (or of the other). The meaning and tools are here unclear since the author uses the most disparate terms interchangeably. In the second process, there is a return to the patient of this very aspect, free of admixture from the therapist. The patient's internalized aspect is subsequently comprehended through a series of trial identifications with the

therapist's own past experiences. This process aims to establish intellectual distance between the client and the therapist, avoiding the potential harm of affective resonance or immediate emotional involvement. To safeguard the therapist's well-being from the impact of internalized patient aspects, Fliess underscores the importance of returning these elements to the patient at the session's conclusion, prioritizing the avoidance of undue harm to the therapist's mental health (*ibidem*). Within this framework, empathy remains a mechanistic process, as underlined by Sharma. It remains unclear what processes are externalized and which are internalized, both from the patient and from the clinician's side. Ferenczi, instead, was more precise in defining these processes: the empathic approach advocated by Ferenczi highlights the positive contributions that the therapist brings to the process of therapy. He highly influenced Harry Stack Sullivan's work, briefly described in the following sentences.

H.S. Sullivan's conception of empathy resides in the early bond between mother and child. This appears to be similar to the notion of synchronicity developed in latter-day infant research studies. This emotional contagion seems to be the means of transmission of thoughts and emotions from the parent to the infant, it is indeed an emotional linkage. Sullivan developed the concept of empathy defining it as the way of transmission of sex roles and cultural values to the child, empathetically apprehended by the child and transmitted by the parent of the same sex (Sullivan, 1965). While the initial empathic connection between a mother and child is considered the foundation for later-life empathy development, the developmental process lacks clear articulation. Regardless, Sullivan views the early bond as a model for subsequent interpersonal connections. In fact, Sullivan played a key role in the emergence of the influential interpersonal relations school, sustaining this bond as spontaneous and reciprocal communication of tenderness, transmitted through empathy. Hence, early interpersonal experiences precede the emergence of distinctions between self and others, existing in a state of empathic oneness. Sullivan views this initial, prototypic experience of tenderness as essential for the developmental socialization of empathy (Sullivan, 1931). In numerous respects, Sullivan's exploration of the subject appears to foreshadow early developmental studies on empathy. The metaphor of the parent-child bond is employed to elucidate the roles and functions of empathy, along with the therapeutic implications of maintaining an empathic stance. Meanwhile, under the influence of Heinz Kohut, a distinctly different interpretation of empathy emerged.

From the Fifties until before his death, Heinz Kohut revisited and refined his perspectives on empathy, distinguishing the clinical role as the "low road" and the epistemological role as the "high road" (Kohut, 1982). He situates empathy within a broader discussion of epistemological distinctions between subject and object, a topic to be further explored later in this thesis. Clinically, Kohut characterizes empathy as a therapeutic stance wherein the therapist adopts a value-free mode of

perception toward the patient. This experiential approach serves both as a means of information gathering and as a catalyst for a potent emotional bond within the therapeutic dyad. Consequently, Kohut defines empathy as a fusion of affective attunement and cognitive information processing. By proposing a metapsychology of empathy, Kohut initiates an examination of empathy as a method for understanding others. This suggests a shift toward a metapsychology that emphasizes understanding the self, moving away from drive theory. While acknowledging the significance of drive theory, Kohut suggests that accessing the core self is achievable not solely through interpretative confrontation but also through empathic listening (*ibidem*). Classical psychoanalysis primarily focused on unraveling the mechanisms of the intrasubjective world, whereas the contextual study of self and empathy entails an exploration of the intersubjective realms and the significance this holds for the individual.

Roy Schafer, Ralph Greenson, Christine Olden, David Beres, Harry Arlow, and Michael.F. Basch all added definitions of empathy trying to help distinguish it from sympathy and separate or identify the subject and the object. I will directly jump to a comparison between G.H. Northrup's and T. Shapiro's theorization as I believe them to be more significant in expressing the ambiguities between subject and object definition and the shape of their relationship. Both authors independently address the epistemological uncertainties associated with the subject-object relationship. Northrup delineates two approaches to achieving an empathic understanding of another: the introspective and the extrospective. The introspective approach pertains to the inner world of the therapist and operates as a purely subjective mode. On the other hand, the extrospective mode, resembling the scientific method, seeks knowledge of objective reality. According to Northrup, the extrospective observer derives results based on sense-data. Within this perspective, the analyst manages to keep a distance between what the patient expresses and the clinician's working model of the patient's reality: a distinction between subjective and objective realities. Introspection is described as the observing function of self-reflective states: the psychic life of the clinician (Northrup, 1986). The clinician can decide whether to use his subjective responses to provide further understanding or consider them as contaminants to the therapeutic setting. The observer's perception is constantly influenced by subjectivity. The further complication is that both processes occur simultaneously at all levels of awareness. If, for instance, the empathic appraisal is made within seconds, it is difficult to know what perspective, at the exclusion of the other, is being utilized at that moment. This assumes only the empathic capacity of the therapist. If, for instance, we define the patient as possessing empathic abilities, the dynamics of the interaction become even more tricky. Shapiro, in his analysis of the literature, addresses epistemological issues similar to those raised by Northrup. The issues concern: the question of subject-object distance and the assumption that the affect empathized with is the same

as that experienced; the difference between empathy as an affect and empathy as an ego state; the difference between affect and ideation; finally, the inadequate examination of dynamic and structural components in preference for the outer behavioral process (Shapiro, 1985; Shapiro, 1974; Sharma, 1992).

Before moving beyond this contribution of psychoanalysis in defining empathy, I would recap the positions explored so far: we have seen that, if empathy is a communication tool to dig into the unconscious material of our mind as Freud sustained, Reik and Fliess moved further by exploring what material belongs to whom in the clinical interaction, followed by Sullivan who defined the mother-child interaction as the foundation for later-life empathy development. On the other hand, Heinz Kohut's theorization is still highly discussed and appreciated because it leaves behind drive theory, going towards a metapsychology of the intersubjective world of the dyadic interaction. Finally, Northrup and Shapiro focused on the relationship between object and subject and how the empathies - at least one for each person in the interaction - work together and shape the relationship between clinician and patient.

1.2.1.2 Diverse aims for each approach

In addition to Sharma's examination of the concept of empathy throughout psychoanalysis development, Edward J. Emery summarizes the psychanalytic view of empathy in four components: "A working conceptual model of the patient's inner life, use of imagination to gain access to the patient's intra-psyche experience, the therapist's own evoked experiences in response to patient communications, and "resonant empathy" (Emery, 1987). This last component involves feelings of warmth and closeness, and a state of merger "in which two persons experience the same affective response to an event" (p. 514). The client-centered view stresses that the focus of unconditional positive regard is different than the focus of empathy. Prizing and unconditional positive regard are attitudes directed toward the individual. The person is valued for their entirety, irrespective of their current emotional state or behavior. In certain situations, the therapist may even experience a negative reaction to a client's current feelings or thoughts, yet still maintain a positive regard for the person as a whole. In this sense, the therapeutic relationship is similar to what any good working human relationship should be. It can be said that the focus of empathy and positive regard differ substantially: the focus of empathy is on the specific moment and thoughts happening in the clinical setting, whereas positive regards have a more broad, general focus, on the person in his wholeness. However, in contrast to prizing, empathy remains neutral.

In defining empathy, the client-centered approach experts Carl Rogers and Ruth Sanford (1984) state: "It means temporarily living in his/her life, moving about in it delicately without making

judgments” (p. 1378). This means that the clinician avoids both positive and negative judgments of the patient’s experience. Therefore, client-centered therapists do not convey sympathy to clients when trying to be empathic. Bohart suggests that the expression of sympathy - for the author defined as “feeling for the client” - differs from the expression of empathy - “feeling with the client” -, the latter being a non-judgmental (phenomenological) experience. Bohart advocates for a distinction between sympathy and empathy, with sympathy implying actively taking a side and therefore being appropriate only under certain circumstances (i.e. the client is experiencing a loss). The author claims it can be dysfunctional “if the therapist’s expression of sympathy implicitly supports a client’s dysfunctional way of viewing or responding to the situation” (Bohart, 1991; p. 37). I agree with Bohart that, as I highlighted using the retrospective by Sharma previously in this section, the psychoanalytic perspective on the function of empathy is analyst-centered: as to say that empathy is emphasized to be a mean for the clinician to understand the patient’s dynamics. This understanding is then conveyed back to clients through interpretations or statements aimed at provoking insight (Bohart, 1991). Therefore, while providing these restitutions to the patient, the analyst’s focus is elsewhere, within the patient’s inner world. To conclude regarding the psychoanalytic perspective, considering M. Berger (1987), E.J. Emery (1987), and M.F. Basch (1983), the main function of empathy in psychoanalytic therapy “is to provide a door into the patient’s unconscious dynamics” (Bohart, 1991; p. 38).

1.2.1.3 Client-centered and self-psychology perspectives

Widely differing from the latter perspective, client-centered therapists are interested in the here and now, the “latest update” of the available experiential world of the client. Empathy is a tool to track the flow and, even though they build conceptual models of change, the goal is not the patient’s insight but to shape the process of tuning into the patient’s here and now, on a moment-to-moment basis (Gendlin, 1967). “Empathy is like a “spotlight” that helps the client learn how to focus attention on this continually changing, emerging, and evolving flux” (Bohart, 1991), Therefore, the clinician does not create a general model of the client’s functioning but a moment-to-moment series of change models. This implies that the term “available” doesn’t equate to being aware or conscious. Like Gestalt therapists, client-centered therapists assert that clients concentrate solely on elements of their currently accessible experience, often symbolizing only those facets (referred to as the “figure” in Gestalt therapy). Empathic therapeutic responses frequently acknowledge and address aspects that are overlooked and unrepresented, yet still within the realm of present availability (Gendlin, 1968). Hence, a distinction between client-centered empathy and analytic empathy lies in their emphasis on understanding present experiences without looking into “deeper” determinants. This distinction

aligns with the divergent goals of these two approaches. Therapist empathy helps the person progress with the ongoing life events, but, more importantly, supports him or her in learning how to use self-empathy to move forward on his or her own in the future. The person is believed to be capable of this no matter what his or her past experience was. This could be a forward-looking view of therapy, rather than a “repair” view.

In a personal letter dated 1985 reported by Edwin Kahn, Rogers defined his approach as trying to “be a companion” on the client’s journey. This position leads to the growth of consciousness, but that is a by-product, more than the goal, meaning that empathy is growth-producing by itself, over and above any insight it might lead to (Kahn, 1985). There are other ways in which this is true. In client-centered therapy the idea that the living experience of sharing with another human being (either through empathy or positive regard and genuineness) already holds a therapeutic impact on its own. Regarding this topic, therapists following this approach would convey that healing occurs through a “meeting” of persons (Friedman, 1985). Gendlin (1990) advocates that the simple presence of another person expressing empathic interest, irrespective of the precision of therapeutic responses, fosters growth.

The definitive switch from a therapist-centered perspective of empathy to a client/patient-centered one is represented by the theorization of Kohut, mentioned above, which will be further explored in some relevant details in the following lines. The general idea of self-psychology agrees with client-centered therapy that empathy is by itself a mean of growth for the individual: for instance, Kohut considered empathy to be a form of “vicarious introspection,” and saw it as having two aspects: understanding and interpretation (Kohut, 1984). Understanding entails a direct comprehension of the client’s subjective world, while interpretation is utilized to help the client recognize that their current reactions stem from the empathic shortcomings of significant figures in their childhood. Both processes aim to promote self-structuralization, which is considered the ultimate objective of therapy in self-psychology. The primary function of empathy is to validate and assist the client in structuring their subjective world. Ultimately, this process leads to a stable and enduring “structuralization” of the subjective world, particularly in relation to the self, enhancing the organization and coherence of self-experience. In practical terms, empathic responses from therapists can aid the client in learning how to pay attention to the internal flow of experience, as seen in client-centered approaches, and promote the development of heightened coherence in organizing self-structures, aligning with the principles of self-psychology. Indeed, adopting a client-centered perspective, David A. Wexler (1974) has depicted the therapist as acting as a “surrogate information processor,” aiding the client in enhancing schematic differentiation and integration.

When considering self-structure from a schematic viewpoint, this aligns with the self-psychological objective of augmenting coherence. I hereby report Bohart's view of summarizing the differences between the three different approaches just described: he claims that "when psychoanalytic therapists empathically listen to clients' moment-to-moment experience in order to help them gain insight, clients may also learn to listen to and hear the implicit meanings in their own experience. When a client-centered therapist helps clients learn to listen to moment-to-moment experiences, clients may gain insight into their dynamics. Therefore, in practice, the difference among the differing perspectives may be a matter of emphasis" (Bohart, 1991; p.46). He makes it a matter of justice, claiming that an empathic help process is more egalitarian than any direction a clinician could impart from above, therefore it supports the idea of a diminished gap between the clinician and the patient.

1.2.1.4 The neuroscientific substrate of empathy

As we explored in the first sections of this thesis through the work of Rizzolatti and colleagues on mirror neurons, an essential contribution to the study of empathy has been given in the past 30 years by neuroscience and social neuroscience, helping re-legitimize empathy as a central element of psychotherapy. Even though the focus of this thesis is not to explain neural substrates of empathy, I believe a more integrated view could give a new angle to better understand empathy's role in therapeutical settings. Neuroscience research focuses on three main brain correlates of empathy: the general, automatic, intuitive emotional simulation process "that mirrors the emotional elements of the other's bodily experience with brain activation centering in the limbic system (amygdala, insula, anterior cingulate cortex" (Elliot, 2018; p.3). Second, the more voluntary, active, conceptual perspective-taking process, particularly localized in medial and ventromedial areas of the prefrontal cortex and the temporal cortex (Shamay-Tsoory, 2009). Third, there is an emotion-regulation process that people use to examine or calm their personal distress when vicariously experiencing the other person's pain or discomfort, allowing them to activate compassion and proactive behavior toward the other. This mechanism's substrate can be probably based in the orbitofrontal cortex, as well as in the prefrontal and right inferior parietal cortex (Decety & Lamm, 2009; Eisenberg & Eggum, 2009). This brief segment about the neuroscientific substrate of empathy was - I argue - needed to go beyond the historical role of empathy in psychoanalysis and psychology - the matter of this thesis-. I will now move forward exploring the influence of empathy in clinical interaction.

1.2.2 Costs, risks, and impact of empathic clinical interactions

Jean Decety and Philip L. Jackson's theory emphasizes the significance of empathy, which involves two essential abilities: the capacity to emotionally connect with the experiences of another person

(affective component) and the ability to comprehend and grasp another person's experiences (cognitive component). They further propose the interaction of three components to reach an experience of empathy in humans: 1) an affective sharing between the two parts (self and the other), "based on perception-action coupling that leads to shared representations" (Decety and Jackson, 2004, p.75). What motivates us to feel empathy - in the sense of caring for others? - Most of the time, empathy is regulated by top-down processes involving cultural values, concepts, and the like. This makes empathy subject to social-cognitive intervention, such as through training or enhancement programs for targeting various goals, including training for physicians and psychotherapists (Decety and Jackson, 2004). 2) Self-other awareness: there's never confusion between self and the other, even in moments of temporary identification. They highlight the risks of affective sharing without self-awareness: it would surely lead to emotional distress or emotional contagion, a condition in which - because of a total identification - one cannot discriminate between his perception of his feelings and his perception of someone else's feelings (De Waal, 1996). Empathy is presented as needing some emotion regulation to manage intersubjective exchanges between self and others. 3) Mental flexibility, needed to accept the subjective perspective of the other and regulatory processes. Jackson advocates that a knowledge of the self is the way to gain an inferential knowledge of someone else's mental states. They refer to the works by B. Keysar, S. Lin and D.J. Barr, which revealed that even adult humans tend to infer that others have the same knowledge (and beliefs) as they do, even when they are already aware of others having a different point of view (2003). This default mode of reasoning about others is biased toward self-perspective, and this is a general characteristic of human cognition. The authors speculate that this is coherent with the shared representations mechanism: one uses self-knowledge as the basis to understand others. However, there is a high cost, and it is quite risky to make inappropriate references about others: mental flexibility and self-regulation are fundamental components of empathy, to recognize the other person like oneself while maintaining some degrees of separation.

Up to this point, plenty of theories have been discussed. Thus, I am going to briefly resume below some considerations by Rolf Wynn (2006) that I believe can be helpful to enlighten empathy's most practical facet: he uses conversation analysis to systematically analyze therapist-patient interactions: "[w]hile much prior work has established the importance of empathy to the alliance and to the success of psychotherapy, little work has previously been done in order to demonstrate exactly how empathy is achieved. In the present article, it has been shown that empathy can be understood as an interactionally achieved phenomenon" (Wynn, 2006). Conversation analysis relies on the assumption that talk is "an organized and ordered social phenomenon, governed by its own rules" (ibidem). Through the use of this technique, the author learns that there are three empathies, expressed

with differentiated conversational forms: 1) one way of manifesting empathy is through expressions whereby the therapist directly expresses understanding of the thoughts, feelings, or behavior of the patient. This type of expression of empathy may be similar to cognitive empathy. 2) Moreover, throughout the repetition of elements of the patient's prior turn, the therapist may build on the patient's prior statement, and thereby take his/her perspective: echoing. This device demonstrates attention to the patient's prior talk and maintains a very tight exchange. 3) The last category of empathy is termed "sharing empathy," wherein the patient interprets their therapist as conveying a sense of shared commonalities, such as similar personal opinions or experiences.

The core structure of an empathetic sequence involves a therapist expressing empathy through verbal or non-verbal means, followed by the patient acknowledging or responding to this empathetic expression. This process is considered a higher-level conversational resource, building upon fundamental communication tools like questions, assertions, and non-verbal cues. The patient's response to the therapist's expression of empathy is crucial for the success of the empathetic interaction. Appropriate responses may include answering questions, agreeing with assertions, demonstrating understanding, or expressing relevant emotions. The study emphasizes that a lack of proper receipt, or acknowledgment, by the patient can be perceived as a conversational failure. This may lead to observable signs of discord in the conversation, such as reformulations, pauses, or an abrupt shift in the topic. In summary, the study underscores the dynamic and interactive nature of empathy in therapeutic conversations, where successful empathetic exchanges require both the therapist's empathetic expression and the patient's appropriate receipt of that expression for effective communication and connection-building (Wynn, 2006).

As shown in previous sections of this thesis, both psychoanalytic and client-centered therapies have focused mostly on an intentional, aware use of empathy, more than on a bodily, automatic one. Robert Elliott and colleagues found it useful to define three main modes of therapeutic empathy: 1) for some therapists empathy is the establishment of empathic rapport and support: the therapist behaves compassionately, intending to create a bond that will support the therapeutic relationship. 2) Communicative attunement consists of an active effort to stay aligned on a moment-to-moment basis with the client's communications and unfolding process. As we overviewed in previous parts of this section (Bohart, 1991), humanistic and client-centered therapists are most likely to emphasize this form of empathy. 3) Mostly emphasized by psychodynamic therapists is person empathy (Elliott et al., 2003) or experience-near understanding of the client's world, which consists of a sustained effort to understand the historical and present context or background of the client's current experiences. The focus here is on the root of the perspective that the client achieved during his or her life. Anyhow, the authors claim that between these operationalizations of empathy, "differences are a matter of

emphasis” (Elliot et al., 2018; p.4). In their metanalysis, Elliot draws on Godfrey Barrett-Lennard’s (1981) operational definition of empathy in terms of three perspectives: that of the therapist (empathic resonance), the observer (expressed empathy), and the client (received empathy). A fourth extra category is empathic accuracy, defined as congruence between the therapist and client’s perceptions of the client (Ickes, 1997). Using empathic accuracy as a measure of therapist and patient’s perceptual congruence, typically involves therapists evaluating or portraying clients based on how they believe clients perceive themselves across different criteria, such as personality traits or symptom lists. Subsequently, therapists compare these evaluations with clients’ self-assessments to gauge the level of empathy, determining the overall alignment between the therapist’s perspective and the client’s viewpoint. This serves as a metric for assessing the therapist’s global personal empathy. Empathy typically explains approximately 9% of the variability observed in therapy outcomes. Elliot and colleagues highlight that overall, empathy accounts for more outcome variance than do specific treatment methods: it is influenced by the degree of similarity (values) between therapist and client, and the therapist nonlinguistic and paralinguistic behavior such as posture, tone, interruptions and the like. Additional research indicates that responses that anticipate and slightly precede the client’s current level of understanding or expression tend to be more impactful than responses that align exactly with the client or those that operate at a broader, more general level. As Wynn introduced in previous parts of this section, saying that empathy is interactionally constructed is probably more accurate (Wynn, 2006) which can happen in different ways. A first matter is: how do clients and therapists mutually perceive one another? In a recent investigation conducted by David Murphy and Duncan Cramer, it was established that a more robust connection with positive therapeutic outcomes occurred when therapists and clients both perceived each other as providing elevated levels of conditions conducive to therapy, such as empathy (Murphy & Cramer, 2014). Elliot and colleagues’ analysis shows that empathy is a robust medium-sized predictor of client outcome in psychotherapy, holding across theoretical orientations, treatment formats, and client problems. (Elliott R. B., 2018)

1.2.3 The perspective of Emotion-Focused Therapy

In the closing part of this section, I will explore how Emotion-Focused Therapy approaches the concept of empathy, digging into its unique perspective and considering how it offers an alternative viewpoint, that might reveal to be crucial for the understanding of change in psychotherapy. We will use a consensus definition of empathy taken from phenomenologically oriented philosophy to analyze therapist’s empathy, as well as client’s self-empathy and client’s empathic communication with others. Phenomenologists acknowledge that empathy provides a pathway to the subjective experiences of others, including emotions while maintaining an awareness of the other as distinct

from ourselves. Furthermore, phenomenologists concur that every conscious experience, even the most basic perceptual encounter, possesses a fundamental affective dimension. (Szanto and Landweer, 2020).

Although emotions have always been present, the academic focus on emotions as such is more recent than the focus on empathy. Currently, the dominant cognitive approach also views emotions as a byproduct of thoughts. Therefore, therapists are encouraged to work with thoughts, which is supposed to promote a change in emotions. Even though this is still the mainstream view, in recent years there has been a movement toward recognizing that emotions are not just byproducts, but important processes crucial to change in psychotherapy (Lane et al., 2015). Leonor Irrázaval and Juan Pablo Kalawski take the concept of “emotion schemes” from Emotion-Focused Therapy, focusing mostly on “primary maladaptive emotion schemes” (Greenberg and Goldman, 2019) or “core pain” (Timulak and Pascual-Leone, 2015) to describe how these emotion schemes can disturb empathic communication, as well as how to re-establish empathic communication in psychotherapy (Irrázaval, 2020). They believe emotions and empathic experience to be deeply intertwined.

Theoretical inferences or imaginary simulations are strategies that in some way can facilitate the empathic or psychological understanding of another person, but it can be claimed that these strategies are not themselves empathy (Irrázaval and Kalawski, 2022). In a 2019 work, Dan Zahavi establishes a second-person engagement as an essential requirement for empathic communication between the empathizer and the empathized, also called “second-person address”. This constitutes a new “we-identity” with a shared “communicational” project (“we-triadic structure”), which has the potential to renovate our self-knowledge. When this psychological understanding is fully empathic, the person recognizes themselves as empathized with. Nevertheless, the interaction between therapist and client diverges from other close personal relationships, such as those with couples, friends, families, and colleagues. This distinction arises primarily due to the psychotherapeutic dialogue centering on the exploration of the client’s experiences rather than that of the therapist. Irrázaval and Kalawski define “normative limits of mutuality” in the therapist-client relationship: the clinician attempts to act on the client to psychologically understand their experience, which depends on a mutuality that is never fully achieved” (Irrázaval and Kalawski, 2022). Matthew Ratcliffe (2017) conceives therapist’s empathy as an extended exploratory process through which the client’s experience is progressively revealed to the therapist. Precisely because the therapist is oriented toward a psychological or empathic understanding of the client and not vice-versa, the therapist’s interventions must be in accordance with the client’s experience, not what the therapist thinks that experience is, nor the therapist’s experience about the client’s experience. The therapist is also not a passive observer but is in a face-to-face “second-person relationship” (León, 2022) oriented to

psychologically or empathically understanding the client through their showing or unfolding their subjective experience. This implies that the depth of the therapist's empathy will be proportionate to the depth of the client's communication (Gendlin, 1986).

When the client feels empathized with by the therapist, full empathic communication is realized, facilitating change in the psychotherapeutic process. Furthermore, when the therapist comprehends the client's experience on a psychological or empathic level, the client, in turn, gains self-understanding through self-empathy. Placing a person's own experience at the center of empathic self-comprehension is indeed the goal of psychotherapy. In psychotherapy, self-empathy acts as a bridge between pre-reflective and reflective levels of self-awareness, in other words, self-empathizing is explicitly one's (the client's) first-person experience facilitated by the therapist's extended empathy. In other words, self-empathy involves the application of reflective awareness to the client's own pre-reflective experience. Self-empathy is thus an extended, narrative form of empathy. Based on Irarrázaval and Kalawaski's analysis, self-empathy is a process rather than a state or an outcome. In the realm of clinical practice, it is evident that mental health issues consistently involve challenges in interpersonal relationships. Expressions like "I am depressed" or "*estoy enferma de los nervios*" ("I am nerve-wracking") may, in fact, stem from the pervasive cultural influences promoting the internalization of problems. Furthermore, looking into symptoms often reaches a limit, while exploring interpersonal issues proves to be more dynamic and vibrant.

According to Irarrázaval and Kalawaski, in psychotherapy, psychological or empathic understanding is acquired through the unfolding of disturbing emotional schemes involved in the client's subjective experience. This unfolding includes emotional expression on the part of the client. Additionally, the client discloses the existential meanings that challenged their vulnerabilities in the context of a close personal relationship. The therapist promotes self-empathy in the client, with the corresponding distinction between aspects of their emotional schemes that relate to original disturbing or traumatic experiences. In this manner, the client begins to distinguish between those emotional reactions that have to do with a past life situation from those emotional reactions that correspond to the present life situation. Thus, interaction with the therapist enables the client to reestablish empathic communication through dialogue, overcoming the client's solipsism.

In conclusion, I believe Irarrázaval and Kalawaski proposed a valid way of looking at change in psychotherapy and an original outline of the process: the authors proposed an extended empathy initiated by the therapist and self-empathy as developed by the client in psychotherapy. Regarding emotions, they have employed the notion of emotion schemes and proposed that maladaptive or disturbing emotion schemes as inhibiting basic empathy. Therapist's extended empathy can reestablish adaptive emotion schemes: their empathic work is an external event promoting change in

the therapeutic process. They also suggested that the therapist's extended empathy develops client's self-empathy in psychotherapy. This self-understanding in turn leads to a reestablishment of the client's basic empathy and facilitates their extended empathy toward other persons, preserving the distinction between the client's and others' experiences. Differently put, theoretical inferences or imaginary simulations focus on the experience of the empathizer who unilaterally uses their own experience to try to understand the experience of another person. Unilateral or "solipsistic anticipations" of other persons, such as interpretations, inferences, prejudices, and the like, imply that we somehow impute or project our own thoughts and imaginations onto the other person's experience, without necessarily preserving the distinction between the experience of the empathizer and the experience of the empathized (Irarrázaval, 2020). The danger of losing this distinction is that the other person's experience could be reduced to the experience of the one trying to understand it, eventually moving away from how the other person actually makes sense of their experience. This communicational mismatch can lead not only to confusion in the interaction with other people but even to psychopathology, for example, in extreme cases of paranoia in which the person attributes to other people intentions of persecution, harm, and potential homicide, which are related to the condition of the person's "ontological vulnerability" and not with the true intentions of others (Irarrázaval, 2022).

1.3 The issue of Epistemic Injustice

In section 1.2, I have collected multiple testimonies on the impact of therapeutic empathy on psychotherapy outcomes. Nevertheless, none of these approaches to the therapist's empathy do share a unique meaning nor structure to refer to when approaching a patient - or, vice versa, a therapist -. To summarize the questions that arose in my mind while analyzing these studies, I can state that a neutral empathy as defined in Bohart's work (1991) seems not to be practical to its clinical use, nor I believe it can be operationalized at my current knowledge of state of the art. Whether empathy is or should be mediated by the therapist or he/she should be a mere "surrogate information processor" (Wexler, 1974) or an empathic listener does not appear so clear to me: how important - if at all - is the intervention of the clinician in interpreting the patient's reported testimony? "Should we prioritise interpretation over understanding or seek to strike a balance between the two if possible?" (Kaluzeviciute, 2020, p.3) What intrigues me most of the literature on empathy is how empathy has historically been conceived as a "therapist's concept", meaning that the patient is rarely intended to be the main protagonist of the empathic interaction - with due exceptions, of course -. In an attempt to give an enlightening angle to these questions, this section is dedicated to a recent notion that - I argue - can be conceived as an umbrella covering all the previous and future topics analyzed in this

thesis: epistemic injustice. The term was coined by Miranda Flicker in 2007 in her renowned paper “Epistemic Injustice: Power and the Ethics of Knowing”. She defines acts of epistemic injustice as actions through which one is systematically damaged in their status as a knower based on their social identity, or rather, harmed based on “identity prejudice” which, she explains, “can come in positive or negative form—prejudice for or against people owing to some feature of their social identity” (Flicker, 2007, p. 28) Analyzing empathy in the medical setting, Eugenia Stefanello argues that epistemic injustice happens through clinical empathy due to a general diminishment of the patient’s credibility, as an outcome of the epistemic power asymmetry between patient and clinician (Stefanello, 2022). I will follow the most recent literature to find suggestions on how to overcome the fundamental issue of epistemic injustice, which still needs to find a proper solution, both in formal and informal interactions.

1.3.1 Critics on the methodology of empathic listening

Lucienne Spencer and Matthew Broome reject empathic understanding as a concept, stating that it can only lead to methodological errors and that is a fundamentally ethically flawed notion. They explore Karl Jaspers’ definition of empathic understanding within the context of phenomenological psychopathology, concluding that such an idea is impossible to adopt because of the epistemically unjust attitudes accompanying it. They contend that embracing “empathic understanding” poses several risks: the potential for error, which could lead to misdiagnosis, mistreatment, and a general misunderstanding of the situation at hand; a distinct form of epistemic harm termed “epistemic co-opting”; lastly, epistemic objectification. Ultimately, they suggest discarding the concept of empathic understanding entirely and adopting a phenomenologically enriched form of “virtuous listening” that restores the epistemic agency of psychiatric patients (Spencer and Broome, 2023). They target the use of Jaspers’ “empathic understanding” in contemporary approaches to phenomenological psychopathology, the branch of psychology that focuses on understanding mental disorders from the perspective of the subjective experiences of individuals who are affected by these disorders.

Jaspers distinguishes between objective and subjective symptoms in psychiatric patients. Objective symptoms are directly observable or inferred through sensory perception and logical reasoning. These include tangible events such as physical gestures and speech expressions, quantifiable performances like the ability to work or remember, and the logical coherence of the patient’s discourse, which may involve reports of delusions. Historically, psychotherapists, including those in Jaspers’ era and perhaps in contemporary psychiatry, primarily focused on these objective manifestations. However, Jaspers also acknowledges the presence of subjective symptoms in psychiatric patients, which are less tangible and more challenging to assess. Influenced by early

Husserlian philosophy, Jaspers conceptualizes subjective symptoms as the intricate inner experiences of the psychiatric patient. This latter definition implies that subjective symptoms need to be grasped throughout a transfer of oneself into another individual's psyche. This is what Jasper calls "empathic understanding" (Jaspers, 1968). The understanding of psychiatric conditions characterized by profoundly unusual experiences requires a nuanced approach, as there is no simple, universally applicable translation for any encounter. Healthcare professionals must consider the diverse interpretations patients may have and act as investigators of meaning. For instance, hallucinations can be perceived as terrifying or as spiritual events, highlighting the importance of understanding the unique meaning structures for each patient. Jaspers emphasizes empathic understanding, which involves recreating the patient's lived experience by digging into it. Empathic understanding is seen as a form of knowledge equal in importance to causal understanding, allowing clinicians to gain insight into the patient's perspective. However, the extent to which clinicians can access patients' experiences through empathy varies and is subject to individual differences and contextual factors.

To address this issue, Spencer and Broome compare Jaspers' concept of direct empathy with Edmund Husserl's own account. Husserl claimed empathy as a quasi-direct experience of the Other. (Husserl, 1962) We welcome the Other into our subjective world in the same way we embrace other aspects of the world- through intentionality. The Other is embraced as a possibility for interaction: Jaspers' empathic understanding can be seen as quasi-direct, hence maintaining a distinction between I and Other (Spencer e Broome, 2023, p. 7). Jasper advocates for a form of empathic understanding that can be mastered only by habituation and training: only this way it can be spontaneous. When the clinician is expert enough, he reaches an inner representation of the patient's experience as well: the patient and the psychiatrist co-inhabit the same lifeworld (*Miterleben*). The constraints of empathic understanding unveil additional facets of its phenomenological nature. When empathy falters in the face of significantly altered lived experiences, empathic understanding requires a mutual perception of the world between clinician and patient (Spencer and Broome, 2023).

Jaspers identifies three approaches to practicing empathic understanding: 1) immersing oneself in the patient's gestures, behavior, expressive movements; 2) digging into the patient's experiences through structured interviews; 3) written self-descriptions (Jaspers, 1968). While Jaspers acknowledges that self-description is the most challenging of the three, it emerges as the most valuable phenomenological method when executed successfully. This is because self-description offers a clear, dependable account of lived experiences and avoids the bias that may taint a psychiatrist's questioning" (Spencer and Broome, 2023). Jaspers argues that living radically different experiences makes you immune to empathic understanding toward each other, but the only one

condition Jaspers identifies as “un-understandable” are primary delusions in schizophrenia, which he describes as “a transformation in our very awareness of reality” (Jaspers et al., 1997, p. 95). Spencer and Broome refer to L.A Sass, G. Stanghellini and M. Ratcliffe: they all advocate for an empathic perception that is between the direct and indirect perception of the Other, a “quasi-perception” in Ratcliffe’s theorization. This quasi-perception seems to match the Husserlian discourse on empathy with the Other, whereby one embraces the Other’s expression and experiences it quasi-directly, even though not as directly as first-person perception. In so doing, Ratcliffe advocates for an “us” experience, much like Jaspers’ notion of the *Miterleben* - shared experience (Ratcliffe, 2012). On these grounds, even the most radically different experiences can be empathetically understood through radical or “second-order” empathy. The main difference between Jaspers’ empathic understanding and “second-order empathy” or “radical” empathy, is that the latter call for the awareness of the difference between I and the Other (Spencer & Broome, 2023). Only through this acknowledgment, we could obtain a quasi-perceptual exploration of another person’s experience’ or a “phenomenological appreciation of their experience as it is for them” (Spencer & Broome, 2023, p. 10). Spencer and Broome claim there are fundamental problems with empathic understanding that cannot be overcome even through the evolved concepts just mentioned: practicing openness and truly understanding the Other are very separate concepts. More significantly, there are high risks of being overly arrogant of one’s ability to understand the lifeworld of the Other using an empathic approach (Spencer & Broome, 2023, p. 11).

I agree with Spencer and Broome in claiming that overestimating the level of insight a clinician can gain through empathic understanding will lead to misunderstanding and misappropriation of a psychiatric condition, or in general of any suffering condition. I criticize Stanghellini’s claim that “by unfolding the structures of a [a patient’s pathography], we can understand an author better than the author himself”(Stanghellini, 2019: 962). Following this idea, there’s a high chance that the epistemic privilege people own on their own experiences will end up being undermined. Considering psychiatric illness as an epistemically “transformative experience” (Paul, 2014), the person shifts in their embodied experience, dragged into a new life-world, and perhaps making empathic understanding impossible to perform if lacking the missed experience, as the patient can miss the means to express this new life-world. Given this context, the clinician can easily misrepresent the condition, therefore empathic understanding is “highly vulnerable to error and hinders knowledge acquisition” (Spencer & Broome, 2023, p. 12). Moreover, it can lead to epistemic injustice, as will be expressed in the following paragraphs.

1.3.1.1 Phenomenological psychopathology

Taking into consideration the patient's subjective experience, in comparison to alternative methods in psychiatry, phenomenological psychopathology has been recognized as a methodology that appropriately prioritizes epistemic justice (Kidd et al., 2022; Ritunnano, 2022; Spencer, 2021). Instead of adopting a universal approach, phenomenological psychopathology aims to foster introspective awareness and the ability to effectively communicate the patient's subjective experience through dialogue between doctor and patient. In this regard, phenomenological psychopathology advocates for the patient's epistemic autonomy by prioritizing: 1) testimonial justice, wherein the patient's firsthand accounts are given significant credence; 2) hermeneutical justice, whereby traditional interpretive frameworks found in diagnostic manuals are eschewed in favor of developing a language that accurately reflects the patient's lived experience. Spencer and Broome point out that empathic understanding inhibits the epistemic agency of the patient, hence it needs to be replaced within the methodology (Spencer & Broome, 2023).

Spencer and Broome draw on Emmalon Davis' definition of "epistemic appropriation", mentioning a new form of epistemic injustice, the so-called "epistemic co-opting", as to say the clinician comes to believe their subjective knowledge is equal to those with the requisite life experience. Davis thought of appropriation as a kind of conceptual theft, but Spencer and Broome separate from this definition, as they believe that in empathic understanding, the practitioner recognizes the patient as the source of understanding, therefore they don't think "appropriation" fits the case (Davis, 2018; Spencer & Broome, 2023). Instead, the authors identify two epistemic kinds of harms at play: the first one is some form of conceptual "co-opting" (rather than theft). They argue that when a clinician claims to have the same knowledge of the patient's lived experience, they take away the patient's "epistemic privilege." This term originated from standpoint feminist theory, highlighting the invaluable insight a woman holds into her experiences of womanhood (Hartsock, 1983). The privilege here is not a beneficial social position but a unique perspective on a lived situation. "It is an essential aspect of the Self, being an "agent of knowledge" through specific lived experiences" (Collins, 1990, p. 266). By exaggerating the clinician's capacity to comprehend the patient's lived experience (their standpoint) via empathic methods, the clinician faces the risk of "co-opting" the epistemic privilege of the marginalized subject. They co-opt the lived experience that is essential to the identity and self-definition of the patient, asserting a level of understanding of it. They strive to engage in a personal, identity-shaping process of self-assertion, despite lacking membership in the marginalized group and the necessary firsthand experiences. As Spencer and Broome argue, "[t]his elicits an epistemic harm, as it dilutes the patient's claim over their lived experience and their

status as a self-defining knower is impugned” (Spencer e Broome, 2023, p. 14). An overestimation of one’s abilities, as defined by the “intellectual arrogance” concept (Davis, 2018; Spencer & Broome, 2023) happens in the case of epistemic co-opting, as the clinician pretends to own a knowledge they cannot obtain.

Following the harm linked to conceptual co-opting, the second epistemic harm identified by Spencer and Broome is “epistemic objectification”, defined by Fricker as being recognized merely as a source of information. Unlike an informant - that communicates something someone asked for -, a source of information conveys knowledge that the hearer can collect. In Fricker’s theorization, when a speaker is reduced to a source of information rather than an epistemic agent, they are exposed to epistemic objectification (Fricker, 2007). The patient’s testimony could be treated more like an observable phenomenon from which information can be gleaned. Stefanello raises a similar concern as she states that the interpretative work of empathy seems to go beyond the interest of the patient, becoming an exclusive concern of the clinician (Stefanello, 2022). Similarly, within phenomenological psychopathology, the patient seems to take on a somewhat passive role as the clinician observes and interprets subjective phenomena. Drawing upon Fricker, one could argue that in this dynamic, the patient loses their epistemic subjectivity (Fricker, 2007; Spencer & Broome, 2023)

A conclusion fundamentally different than the one taken by Spencer and Broome is Jake Jackson’s. Even though they all dive into Jasper’s theorization, Spencer and Broome deny the concept of empathic listening, whilst Jackson is inspired by Jaspers’ theorization and listening practice. In Jasper’s theorization, it is part of the clinician’s job to evaluate the testimony’s soundness, even though the testimony must come first. In Ratcliffe’s theorization, as quoted by Jackson, the openness is involved in the empathetic process: empathy’s aim is to understand and valorize the differences between one and the other, even if there could be similarities between the two (Ratcliffe, 2014). Jackson concludes that in approaching the other with an empathetic attitude, an epistemic agent brackets out their own worries and biases concerning depression and takes the other’s life-experience as real-for-this-other (Jackson, 2017), trying to exclude epistemic injustice. Engaging with others through empathy demands setting aside one’s own viewpoint; otherwise, there’s a risk of misunderstanding and misrepresentation. Establishing trust and cooperation between parties is crucial for a deeper empathetic comprehension. Empathy offers a straightforward method that bypasses cognitive biases, focusing instead on discerning the needs of those experiencing depression, which encompass attentive listening and acknowledging their testimonies (ibidem). By engaging empathetically with the experiences of others, one can establish their epistemic responsibility in

relation to them. Practicing empathy enables one to actively fulfill their responsibility towards others, even if it involves something as seemingly passive as being present and listening attentively (ibidem).

1.3.2 Suggestions for a more unbiased listening

Moving forward the analysis of classical empathic listening presented above, modern interpretations of “radical” and “second-order” empathy aim to mitigate epistemic objectification by emphasizing an openness toward the Other that acknowledges their subjectivity. Nevertheless, in practical terms, patients often find themselves relegated to a passive role as clinicians extract meaning structures from their experiences, viewing them from their perspective (Stanghellini, 2019: 962) This process frequently remains observational, particularly as perception, whether quasi-perception or direct, is fundamental to empathic comprehension. The Other is often depicted as a subject whose subjective phenomena are observed and interpreted, rather than as an active participant communicating their experiences directly (Spencer & Broome, 2023). Clinicians may achieve a more comprehensive understanding of psychiatric experiences by refraining from reducing patients to mere objects of knowledge. However, there are inherent risks associated with this approach, including the potential for error stemming from transformative experiences, leading to misdiagnosis and mistreatment, and epistemic injustice, manifested through the appropriation of the patient’s experiences, intellectual arrogance (epistemic co-opting), and objectification. Consequently, the authors contend that the concept of empathic understanding proves unhelpful within the context of phenomenological psychopathology (Spencer & Broome, 2023, p. 16). Attempting to have a surrogate lived experience of a psychiatric condition only hinders understanding and risks undermining the epistemic agency of the patient, therefore Spencer and Broome agree with Jaspers that it is impossible to replay a “radically different experience” reproducing the experience it in the clinician’s mind: therefore, a new methodology is essential, we need to face that we cannot experience their experience.

Fricker’s proposal of a virtuous listening - “a more pro-active and more socially aware kind of listening” - would help improve a more inclusive hermeneutical environment (Fricker, 2007, p.171). Similarly, Stanghellini identifies listening to mediate therapeutical interactions (Stanghellini, 2019). In Spencer and Broome’s opinion, virtuous listening allows the two protagonists to combine the clinical and experiential expertise in the setting, to extract together the relevant meaning structures. In this way, the role of epistemic agent of the patient is re-established, their unique epistemic privilege is acknowledged, and they embody an interpretative role as well as the clinician. A (more) epistemic justice is set.

“Speaking speech, also known as “authentic speech”, is a spontaneous and creative speech-act of first-hand meaning-making” (Spencer & Broome, 2023, p. 18). It concerns an original speech act, the speaker is saying something altogether new. Virtuous listening acknowledges the transformative nature of psychiatric illness and sidesteps the mistake of presuming knowledge beyond reach. The patient, inherently a speaking subject, engages in authentic speech thereby getting rid of epistemic objectification and co-opting (Spencer & Broome, 2023, p. 18). At this point, I feel like the substitution of empathic understanding is needed and asked for: it could be replaced with virtuous listening in the methodology of phenomenological psychopathology, to address the epistemic and ethical concerns it’s been presenting. This adjustment aligns with the epistemically just principles of phenomenological psychopathology. By integrating Fricker’s concept of virtuous listening with Merleau-Ponty’s phenomenology of speech expression, Spencer & Broome propose a replacement for empathic understanding that restores the epistemic agency of psychiatric patients (Merleau-Ponty et al., 2012).

1.3.2.1 Genuine listening and imaginative practices

Jake Jackson digs deeper into what it means to use empathy as a means of support and care, he focuses specifically on individuals experiencing depression in practice, claiming for a rigorous approach (Jackson, 2017). The author advocates for a solution including a phenomenological approach that privileges the subjective and lived experience of depression over other epistemic sources. He advocates for actively listening and engaging with the person’s testimony of their depression as direct evidence. The approach suggested by Jackson is somehow more holistic, he claims that “a depressed mood affects all of one’s experience of the world” (Jackson, 2017, p. 362), and depression is a phenomenologically rich experience as such, and the person’s lens is the one to be taken in account not to fall into prejudice, epistemic injustice and stigma. Others perpetrate epistemic injustice against individuals with depression by persistently disregarding emotions they may struggle to understand. A non-judgmental attitude should stem from directly listening to and embracing depressive testimony. Sympathy involves trying to experience another’s pain as if it were one’s own, but it frequently mixes one’s personal experiences with those of the other. A sympathizer often focuses on projecting what they believe the other person is feeling, rather than attending to the actual testimony of the depressive individual (Jackson, 2017). Therefore, these approaches gaslight and discredit the experience of the sufferer.

A term that has been gaining attention in the past few years way beyond the academic field is what Kate Abramson defines as gaslighting: cases in which one “wholeheartedly, constantly and

consistently aims at the destruction [of] his or her target's standing to issue challenges" (Abrahamson, 2014; p. 11). Gaslighting's effectiveness is based on the assumption that someone else's feelings are "wrong", repressing the person's feelings, therefore hurting them: the sufferer's epistemic agency is gaslighted, and they are silenced. Jackson draws on Husserl's conception of empathy that one stands in relation to the other by analogy, a connection deeply bonded to attention to the other and imagination at the same time to engage with a different Husserlian concept, one must "bracket" out their own preconceived background knowledge and opinions about depression when listening to someone experiencing it, instead immersing themselves in the other person's testimony and physical presence during direct interaction. However, it's important not to assume that the analogy is completely accurate. The other person's experience is inherently different from one's own. One cannot fully understand the other's experience by simply comparing it to their own life. While one can grasp the concept of breaking a bone and the associated pain through the other person's testimony and reactions, one cannot claim to truly know what it's like without firsthand experience. They can only trust and empathize with the other person's firsthand experience through a connection built on testimony and empathy. An empathetic attitude works toward a "close-enough" understanding of the other as other, never to be reduced to a stereotype. This limitation, this lack of wholeness and certainty in our empathetic understandings of others, underscores the need for the other's testimony as the valid source for confirmation (Jackson, 2017).

Catriona Mackenzie and Sarah Sorial raise a claim regarding how realistic genuine empathetic perspective-taking is, given gendered, racial and embodied differences (Mackenzie & Sorial, 2022). The authors propose extending the scope of the concept of "characterization" as described by P. Goldie (2000), or "repertoire" as described by R. Whollheim (1984): some psychological features of the protagonist of the imagining to include other features, such as the agent's specific embodiment, social relationships and social position, gender and racial identity, cultural background, geographical and historical location, and the like. One can do nothing to avoid the perspective of imagining to be one's own. They suggest distinguishing among several different kinds of imaginative projects: imagining oneself otherwise (or "mental time travel"); imagining oneself as another or in the other's shoes; and imagining being another. Anyhow, "the degree to which we are able successfully to imagine being in another's situation depends significantly on our knowledge of that person" (Mackenzie e Sorial, 2022, p. 369). To envision scenarios, we are prone to rely on our own subjective viewpoints, projecting our perspectives and characteristics onto the other's circumstances, and contemplating how we would feel and think if we were in their position (Mackenzie e Sorial, 2022).

In order to envision ourselves as someone else, we need to completely change our perspective and imagine ourselves in the other person's situation. Robert Gordon, a simulation theorist, describes this as shift our "egocentric map" (Gordon, 1986) onto that of the other individual after making the required imaginative adjustments. Mackenzie and Sorial focus on the challenge of simulation in situations involving differences of embodiment, gender, racial or ethnic identity, culture and so on, because imagination is an embodied mental capacity. They believe the imaginative constraints arising from such differences are not necessarily insuperable (Mackenzie e Sorial, 2022, p. 369). Coplan describes a concept called "pseudo-empathy," wherein individuals mistakenly believe that imagining another's perspective grants them access to that perspective. However, this form of perspective-taking is self-centered and prone to prediction errors and misattribution. In contrast, genuine empathy, as defined by Coplan, involves a complex imaginative process where an observer simulates another person's mental states while maintaining a clear distinction between oneself and the other. This type of empathy requires emotional matching, other-orientation, and self-other differentiation. Achieving genuine empathy is challenging as it necessitates setting aside one's own perspectives, regulating emotional responses, and possessing substantial knowledge of the other person. The greater the difference between oneself and the other person, the more difficult it becomes to understand their subjective experiences (Coplan, 2011). Mary Scudder proposes the existence of an "empathy gap" that separates imagined perspectives from real ones. This gap is attributed to an egocentric bias in perspective-taking, leading individuals to assess others based on their own thoughts, emotions, or social circumstances (Mackenzie e Sorial, 2022). The authors propose that eliciting empathy in others through "empathetic narratives" places significant demands on speakers. It requires them not only to possess proficiency in the dominant language but also to ensure that their narrative is well-crafted and sufficiently compelling to captivate the imagination of the audience. Additionally, speakers may need to provide relevant details about their lives or background to enable others to imaginatively connect with their experiences. As previously discussed, the extent to which a listener can engage with another's experience depends on the repertoire or characterization available for imaginative projection. Consequently, the success of a listener's empathetic imagining hinges on their familiarity with the speaker's narrative (Mackenzie & Sorial, 2022).

1.3.3 Ill people and injustice in the medical context

Taken together, the positions presented till now advocate and sustain an effort made by the clinician, whatever its nature is. On the other hand, Ian J. Kidd and Havi Carel underscore how, in a 1984 study, they found that the average time between the patient starting to speak and the clinician's first interruption was only eighteen seconds (Kidd e Carel, 2017). The epistemic complaints brought up

by patients in healthcare systems are frequent and have two primary characteristics: firstly, they often complicate or compromise the relationship between patients and healthcare professionals, leading to practical issues such as incomplete symptom reports and treatment adherence, necessitating additional tests and referrals, potentially endangering treatment outcomes and incurring significant costs for the healthcare system. Furthermore, such breakdowns can result in negative patient experiences, associating hospitals not just with illness but also confusion and isolation. Secondly, these complaints are not isolated incidents but rather systematic and longstanding problems within healthcare systems. Empirical evidence suggests that they stem from inherent structural features of contemporary healthcare practice, as highlighted by Barbara M. Korsch's influential work on doctor-patient communication gaps. In 2012, Darrell G. Kirch, the president of the Association of American Medical Colleges, announced an ambitious reform of the Medical Career Aptitude Tests (MCAT): starting in 2015, American medical students' curricula would include ethics, philosophy, and cultural studies, in order to develop and enhance their abilities to comprehend and actively involve themselves in the worries and encounters of their patients. Other recent shifts in healthcare attitudes, particularly in the United States and United Kingdom, such as the emergence of 'narrative medicine,' can also be viewed as responses to these epistemic challenges. However, typically, the underlying epistemological issues giving rise to these challenges remain unrecognized and unaddressed. For example, there's a growing emphasis on doctors' "communication skills," focusing on superficial adjustments to physical behavior like maintaining open posture and eye contact. Such measures may overlook and fail to address the deeper epistemic inequalities inherent in patient-physician relationships. Similarly, the use of simplified questionnaires to gauge "patient satisfaction" is another instance where opinions are sought but only within predefined parameters that prioritize measurable and standardized aspects of patient experience. These approaches often rely on debatable epistemological assumptions, overlooking the inherent epistemic inequality and power imbalances within patient-physician relationships. This oversight challenges optimistic beliefs regarding the effectiveness of superficial behavioral changes by physicians. Kidd and Carel claim that ill people are vulnerable to epistemic injustice, due to prejudices surrounding illness and some structural features of contemporary health practices, secondly that epistemic injustice can therefore help explaining - at least partially - patients' complaints about their healthcare experience. In the case of illness, communicative constraints are recurrent and their intersection with epistemic unjust practices can significantly influence people's experience of the clinical session.

Given that some cases of illness could impact a person's epistemic reliability, I agree with Kidd and Carel's claim that "judgments about the epistemic credibility of ill persons are too often prejudicial and generated and sustained by negative stereotypes and structural features of healthcare

practice” (Kidd and Carel, p. 175). They solely refer their claim to chronically ill patients, as a matter of clearness. Instead of carefully and thoughtfully assessing each person’s credibility based on their unique situation, healthcare professionals and others might unconsciously rely on stereotypes, which often include negative biases, such as picturing illness as a moral, social, epistemic failure, something that can contaminate its surroundings, and often portrayed also as a punishment (Kidd e Carel, 2017). Drawing on Miranda Fricker’s claim that the outcome of being hurt by epistemic injustice spreads to a person’s whole life, Kidd and Carel link epistemic injustice to social injustice (Fricker, 2007; Kidd and Carel, 2017). Healthcare institutions prioritize biomedical approaches, neglecting the subjective experiences of illness and focusing more on efficiency and specialist needs. This leads to a gradual erosion of the epistemic confidence of ill individuals. Testimonial injustice arises when negative stereotypes impair the credibility of speakers, affecting ill persons who often face stereotypes undermining their epistemic competence. Patients’ testimonies are sought for factual information but are often excluded from decision-making processes, reflecting a perception of patients as somewhere between an epistemic subject and object, intersecting with other forms of objectification in medical settings.

Following the idea of participatory prejudice as introduced by Hookway, Kidd and Carel believe that ill patients are vulnerable to this kind of prejudice because other people suppose them to lack the resources needed for the possession of a robust sense of relevance - the capacity to determine which ideas are worth taking seriously, which objections are meritorious, and so on -. The second reason is that they are usually considered as objects of the epistemic practice of medicine rather than as participants: since they get asked only basic biographical information, the belief among medical staff is that ill people can only provide information of this kind, rather than epistemically substantial ones (Young & Nussbaum, 2011). They therefore suggest that the achievement of epistemically just healthcare practices and institutions requires the revision of underlying epistemic presuppositions and a strong epistemic pluralism that incorporates the informational contributions of patients. Hermeneutical injustice, moreover, can happen through epistemic isolation: situations where a person or group lacks the knowledge of or means of access to, particular information (Kidd e Carel, 2017, p. 184); i.e. patients can give meaning to their experience but face lack of social recognition and epistemic respect. In the case of illness, hermeneutical injustice arises because the resources required for the understanding of the social experiences of ill persons are not accepted as part of the dominant hermeneutical resources. (Kidd e Carel, 2017) Individuals who are ill often face challenges in expressing their experiences, which are typically considered inappropriate for public discussion and have little impact on clinical decision-making. These experiences may be viewed as private or shameful, leading to social and personal costs. Moreover, ill individuals often encounter

hermeneutical injustice, as their non-dominant interpretive resources are disregarded by healthcare professionals. This exclusion exacerbates difficulties in communicating the illness experience, characterized by inarticulacy - making it difficult to effectively convey certain aspects of the illness experience - and ineffability - where some aspects of the experience are simply indescribable -.

1.3.3.1 Patients' narratives

I believe that Seisuke Hayakawa's work on epistemic responsibility and oppressive epistemic practices highlights and give meaning to the epistemic issues of narratives discussed so far (Hayakawa, 2022, p. 112). The author focuses on how in the healthcare system the illness narrative of the testimony is often disregarded, and analyses which kind of narratives are more prone to be epistemically excluded or marginalized. "He believes that epistemic injustice in illness often concerns how the stories and the testimonies of patients are wrongfully disregarded" (Hayakawa, 2022, p. 113). The experience of the patients regarding their own disease is often dismissed. He draws on Arthur Frank's analysis, in which the author points out that there are three main kinds of illness narratives: restitution, chaos, and quest. A restitution narrative focuses on the way one goes back to one's former "normal" life, a chaos narrative represents being stuck in suffering, and a quest narrative represents the deep process of giving new meaning to one's own illness and life. These three narratives are not intended to be exhaustive or comprehensive (Frank, 2013). Of the three, the one that Frank considers to be dismissed most often is the chaos narrative, also presented as anti-narrative, because of its lack of narrative order. It is the case when a person is so overwhelmed by her suffering, that only her body can express the suffering and the grieving associated with the illness.

One of the differences between a chaos and restitution narrative is how the temporal perception varies: in the first one, the illness disenables any projection of a future, whilst in the latter illness is a temporary interruption, the disease will end. It's not hard to understand that a restitution narrative can have a severely negative psychological impact on those whose lives are changed irrevocably by their illnesses (Hayakawa, 2022). Hayakawa explains how restitution is the social norm people normatively follow; hence, any deviation is considered socially inappropriate or out of context. He claims that this has an important epistemic dimension: the norm limits the kinds of discourses that are socially appropriate and acceptable, it is a form of coercion. Thus, in this norm, patients are expected to tell restitution stories and no other types of stories: they are also expected to pay more attention to the aspects that fit this type of positive, forward-looking storyline than to those that might disrupt it (Frank, 2013: p. 95). Therefore, the chaotic nature of illness is often overlooked in terms of knowledge and does not gather significant empathetic comprehension from others. When

someone's (metaphorical) cry of suffering is repeatedly dismissed, people move to the self-doubt condition in which they believe their own perspective is unworthy of others' consideration. The experience of epistemic injustice can be humiliating per se, mostly for people suffering from illnesses that they can't explain verbally - included in the chaotic narrative, as mentioned above.

Another case of epistemic injustice is when the illness is chaotic and, even though they can express the harshness of their current life experience of pain, the severity of their pain is underestimated at best, and they might believe they're being treated as not worthy of respect" (Hayakawa, 2022). I am prone to agree with the author's critical viewpoint on the so-called modern societal life, that treats human fragility and mortality "as something to be avoided or even abhorred." (Hayakawa, 2022, p.122), and this is extremely evident in the norm of restitution, which presupposes that people can manage loss, grief and pain and return to a normal life, the one they presumably used to have before the illness. The modern society prioritizes productivity and values related to capitalism, therefore epistemic practices such as collecting a personal story have become a matter of restitution rather than a matter of listening and validation - chaos.

The norm of restitution is unquestioned by people in contemporary culture, as it became internalized by the vast majority together with the idea of a productivity-oriented life. One of the reasons behind the obstinate orientation toward restitution concerns our intrinsic vulnerability as humans: how do we operate about others' suffering expressed in chaotic testimonies? Hayakawa lists a few possible tendencies: the first is the assumption that, since we are vulnerable, we can have empathic access to others' experience of suffering; the second acknowledges that, as we are vulnerable, we may be strongly motivated to defend ourselves by responding with a restricted view: the logic of restitution. Encouraging chaotic sufferers with stories of restitution could pressure them to talk about their illness positively, even if against their will, while still keeping things chaotic: communicating restitution-oriented words of encouragement to them can prevent us from being exposed to—and being overwhelmed by—a chaos narrative. Additionally, restitution-oriented encouragement can be performed under the excuse of good intentions. It can let us hide our attitude of self-concern which leads us to avoid listening to another's chaos. Hayakawa advocates for an empathy that does not aim at imposing over anything but rather requires us to respect another's perspective, as distinguished from our own, and to sensitively respond to the differently situated other (Hayakawa 2016a; p. 236).

As we acknowledged multiple times through previous sections, a similarity bias is intrinsic to empathy: we feel greater empathy toward the ones similar to ourselves (Elliott, 2018). The

implication here is that empathy fails to alleviate such injustices. This perspective easily extends to an epistemological context within illness. Owing to empathy's tendency to favor similarity, many socially privileged individuals—those who are healthy enough to imagine and pursue hopeful prospects—tend to show more empathetic concern for positive, forward-thinking patients compared to chaotic ones, who are consumed by present suffering. In essence, narratives of chaos are intellectually marginalized due to an overwhelming empathetic focus on narratives of restitution and recovery. If this holds true, then the previously discussed epistemic injustices could be reconceived as injustices rooted in empathy or empathetic biases. I also recognize the likelihood that the current inclination towards empathy hosts a profound bias towards similarity. This suggests that we need to reframe and thicken the concept of empathy in terms of its ability to reduce social injustices, such as epistemically wrongful oppression.

Hayakawa underscores the “humanizing role of empathic understanding” (Hayakawa, 2022, p.128), given that when an illness testimony receives epistemic respect through empathy, then the suffering person perceives herself as worthy of being valued, developing a better sense of self-respect. The author advocates for epistemically responsible empathy, in which epistemic injustice is fought at two levels: the first one happens at the level of small-scale interpersonal interaction, the second at the level of large-scale social processes. Therefore, both micro and macro levels of interaction get involved. Getting briefly into them both: the author believes that mature empathy requires the elements of epistemic humility and epistemic dependence to be incorporated: in his view, this could be extended to responsible empathy for chaotic suffering. The author claims that there is a direct connection between epistemic humility and two forms of epistemic dependence. Accordingly, epistemic humility, which is inherent in responsible empathy as relevant to chaotic suffering, may typically require us to display the following dispositions, to a certain degree:

1. To show understanding for the sufferer's ongoing feeling of isolation.
2. To realize the big gap in experience between most of us and them and stop assuming we can easily grasp their intense experiences of illness.
3. To trust the sufferers themselves to help us understand their difficult situation.
4. To admit our own vulnerability and defensiveness instead of ignoring them, which might make us doubt or downplay the sufferer's description of their chaotic suffering.
5. To admit that we can't fully respond to their story on our own.
6. To work together with others who can listen and support us in understanding the chaotic story, sharing the responsibility of understanding.

According to Hayakawa, being vulnerable as humans, at times we must epistemically depend not only on the chaotic patients but also on an epistemically supportive other, who can provide a quite safe setting that makes us less defensive and more open to messages contained in chaotic testimony. After all, our receptivity and openness, which are necessary for empathic understanding, come into conflict with our defensiveness. Without a proper appreciation of this profound tension, we may find ourselves adopting an excessively optimistic view. Hence, we must acknowledge that epistemic dependence and epistemic humility - involved in responsible empathy - require an interpersonally extended form of epistemic practice that goes “beyond individual epistemic agency” (Hayakawa, 2022, p.131). The author draws from Iris Marion Young and Martha Nussbaum the distinction between interactive - direct way of treating one another - and structural - macro view on social processes - viewpoints. The latter considers how one’s actions may participate in the social processes that lead to injustice (Young & Nussbaum, 2011). Following this idea, the norm that everyone follows to use restitution-oriented understanding is what leads to injustice in the end: people participate massively in the institutional processes producing structural injustice. The restitution narrative is highly institutionalized in the healthcare systems through the epistemic habits described above.

1.3.3.2 Suggestions to overcome Epistemic Injustice

Finally, Hayakawa proposes two structural remedies necessary: the first type addresses epistemic injustice directly inflicted on chaotic sufferers, as to say it needs it pushes the empathizer to respect the testimony as such, responding better to the underlying message which can be the most fundamental epistemic existential need. The second structural solution addresses the epistemic injustice faced by listeners of chaotic narratives, emphasizing the disproportionate burden of caring responsibilities, including epistemic ones. It highlights the vulnerability of those who hear chaotic testimonies and suggests establishing a system that prioritizes the well-being of caregivers and avoids overburdening already precarious individuals, such as patients’ families, women in patriarchal societies, and caregivers experiencing burnout. The necessity for a power-sensitive and liberating care system is emphasized, aiming to transform the current exclusive epistemic community into a more inclusive one that combines epistemic and empathic values. This shift would relieve individuals burdened with excessive epistemic responsibility while encouraging others, particularly men in many societies, to listen empathically to both patients’ and caregivers’ testimonies. Such reforms would distribute epistemic and empathic practices more equitably, alleviating emotional stress for caregivers and improving responses to chaotic storytellers’ needs. Addressing the epistemic injustice suffered by listeners also enhances support for those sharing chaotic stories, highlighting the importance of structural remedies that cater to both groups’ epistemic needs.

Nevertheless, Barrett Emerick claims that the nastiest form of civilized oppression is testimonial injustice, stating that the danger coming from civilized oppression lies precisely in its being civilized (Emerick, 2016). Therefore, even though they act with good meanings, people often fail to realize their role in committing oppression as accomplices. The author suggests that everyone suffers from system justification bias differently, based on their social position. He proposes two methods to reach an awareness of one's own complicity as an oppressor: the first is education aimed at acquiring propositional knowledge and the second is adopting the attitude of empathetic understanding, as described by J. Harvey (2007) as a practical, active action. Emerick claims dialogical imaginative capacity, meaning the imagination used in a conversational context, when we try to give meaning to the experiences they're describing to us. "In order to close the epistemic distance between us, my attempts to understand what it is like to be you must not flow solely from me or what experiences my life has afforded me" (Emerick, 2016, p. 6). Following Linda Alcoff's proposition, it's advocated that we engage in dialogue with others rather than speaking on their behalf (Alcoff, 1992). Additionally, it's essential to recognize that one of the key reasons for advocating this approach is to enrich our ability to empathize with others, thereby mitigating the risk of perpetrating testimonial injustice and civilized oppression (Emerick, 2016, p. 6).

To show the benefit of testimonial justice most correctly and spontaneously there are two methods, already presented by Miranda Fricker in 2007: the first is via what she calls "plain personal familiarity", needed to dismantle that prejudice that in the first place was obstructing the unprejudiced credibility judgment. This happens via habituation, within the time that prejudicial features take to be forgotten or become irrelevant. The second is via what she calls the "ideal of full possession of the virtue of testimonial justice" (Fricker 2007, 96). The concept is that through a regular practice of refining one's credibility judgments, individuals develop such proficiency that their "testimonial sensibility" automatically generates corrected credibility judgments without conscious intervention (Emerick, 2016). Emerick claims that overcoming the obstacle of not recognizing ourselves as accomplices in the promotion of injustice requires more than mere familiarity or knowledge: it is in fact an active work to "get outside of ourselves and our own incentives and think of what it feels like to be on the receiving end of such treatment" (Emerick, 2016, p. 8). The question a hearer needs to ask themselves is "What's going on for her?" instead of "What's going on for me?" "If someone leaves a communicative interaction less able to testify as a knower, then we have good reason to suspect that testimonial injustice has taken place" (Emerick, 2016, p. 11). Harvey claims empathy to be a work that needs to be done day by day, time by time, among a lifetime, therefore empathizing once does not mean anything (Harvey, 1999). Empathy requires the empathizer to engage in dialogical imaginative perspective-taking, which means that oppressed groups have an important role

to play in helping privileged groups understand what it is like for them to live in and experience the world, ad Emerick remarks. Oppressed groups must help civilized oppressors empathize, but this can be problematic for at least three reasons: firstly, it requires work from oppressed groups, an additional burden over the extra work they already face. Secondly, it can be emotionally taxing for oppressed groups to constantly recount their experiences. Thirdly, oppressed groups are often in a position not safe enough to educate privileged groups (Emerick, 2016).

Chapter 1 was thought as a guide to navigating empathy from its origin - and discovery - to some of its correlates and the issues empathy raises when brought out of the folk-psychological context into the clinical one: from the confusion regarding its conceptual definition through the issues that arise when specifically inserted in a clinical setting, to the more - I argue - problematic topic of epistemic injustice, which is the angle I am willing to adopt while exploring the topics of the following chapters. Primitive biofeedback techniques and their co-related innovations in therapeutical contexts will be surveyed within the second chapter of this thesis.

CHAPTER 2: BIOFEEDBACK

2. Introduction

In this chapter, I will explore how biofeedback techniques have popularly stepped into the clinical encounter, first through a more medical setting for the treatment of pain and then into the psychological one. The impact biofeedback had in shifting the perspective of the clinicians toward a more practical mind-body conjunction will be explored, to understand how physiology and psychology intertwine during clinical sessions. Biofeedback recently gained space among the studies on physiological synchronization (PS), one of the names attributed to the shared physiological experience of clinical dyads, as well as of couples and other dyads. Even though the corpus of literature on PS is still relatively small, numerous scholars have been trying to define some criteria to make the research field easier to explore and the comparison of results clearer to investigate. New frontiers of biofeedback and physiological synchronization will be discussed in Chapters 2 and 3.

2.1 Definition of biofeedback

According to the American Psychiatric Association (APA) website (2019), biofeedback is a process that enhances health and performance through the process of learning how to change one's physiological activity: this gets done using instruments that "feed back" information to the user on their physiological processes rapidly and accurately. Moreover, the renowned website Psychology Today (2022) defines the accumulated data resulting from the monitoring of the physiological state as allowing individuals to "consciously control aspects of their physiology". Even though it might sound like last-generation hi-tech, biofeedback has been widely renowned for more than fifty years now: indeed, in 1982, David Sarnoff described how, already in the Seventies of the last century, physiological monitoring devices - such as electromyography (EMG), galvanic skin response (GSR), electroencephalography (EEG) and digital thermometer - in the medical field were already in use and gaining popularity "as part of the treatment of stress-related illnesses" (Sarnoff, 1982, p.357). He describes biofeedback as a "relaxation aid", a counseling tool to improve relaxation and decrease anxiety, desensitization and hyperactivity (ibidem).

To further explain the possible impact of this tool, in their systematic review Poppy L.A. Schoenberg and Anthony S. David clarify that "Biofeedback potentially provides non-invasive, effective psychophysiological interventions for psychiatric disorders" (Schoenberg & Davis, 2014, p. 1). They aim to display how biofeedback techniques have been applied to the treatment of psychiatric disorders, at least up to 2014 (Schoenberg & David, 2014): therefore, their review is included here in order to gain a more precise idea of how the medical and psychological uses of these techniques are tied. Before starting, I intend to clarify that discussing whether biofeedback treatments on their own influence therapeutic outcomes or not, falls outside the scope of this study; therefore,

any reported measure of efficacy will be incorporated for the sole purpose of elucidating the exposed contents. As Schoenberg and David repeatedly underscore in their study, non-pharmaceutical treatments could gain much from biofeedback techniques: the devices are nowadays cheaper and cheaper to use and treatments do not include any medication, fostering a positive approach to cognitive and behavioral strategies for treating common mental disorders, such as depression and anxiety. In fact, in their review they identified anxiety as the most treated disorder within the studies they analyzed, being 68,3% of the total (ibidem).

A relevant aspect - I argue - noted by Schoenberg and Davis is that some disorders are characterized by limited physiological responsivity and low capacity to recognize internal states, or simply express symptoms that are just not highly concerned by physiological states - for instance, personality disorders -. Nevertheless, the authors suggest that mostly because these characteristics seem intuitively incompatible with a biofeedback treatment, the technique could open new “introspective mind-body channels” in such individuals (Schoenberg and David, 2014, p. 23); consequently, this could influence positively patient-clinician relationship and/or personal insights. However, further studies should explore this possibility. Taken together, these considerations help us define why the use of biofeedback can be suitable to ameliorate a dyadic interaction as the one between the clinician and the patient, working on the awareness of the mind-body connection in the context of psychopathology but - more in general - of any clinical treatment.

2.2 Biofeedback in a clinical context

As I previously mentioned, the study by Sarnoff - even though it was carried out in earlier stages of physiological studies - is precious in noticing the state of the art of biofeedback in counseling in the early Eighties of last century. Up until his research, the use of biofeedback had been limited to specific areas: EMG feedback to release muscle tension, GSR feedback to learn how to relax autonomic nervous system arousal, temperature feedback to produce alpha waves - associated with a state of mental relaxation. All these goal states are not compatible with an anxious condition (Sarnoff, 1982).

What caught my curiosity while reading this fairly aged article is the suggestions the author places out to utilize biofeedback in new ways. Specifically, Sarnoff points out that GSR, since it's used to measure autonomic arousal - as to say the symptoms associated with anxiety like palpitation, dry mouth, and the like - could be useful in detecting what he calls “emotionally charged areas” (Sarnoff, 1982, p. 358). He advocates that, since the physiological response is displayed to both the clinician and the patient, any defense mechanism - for instance denial - would be harder to apply: this type of data is somewhat stronger than any clinician interpretation. His second claim is that some patients will relax and relax through the use of GSR, but they will eventually reach a sort of baseline

- they will no longer be able to relax: in Sarnoff's opinion, these "physiological blocks" are related to mental and emotional ones that stop the patient from gaining new insights and progresses. An interesting addition of the author is that he considers the block dissolved once the patient manages to relax more and again, after the psychotherapeutic intervention. Sarnoff suggests also using EMG as a similar strategy, applying electrodes to tense muscles patients can find out how their posture influences the level of tension they experience psychologically (ibidem).

On another level is EEG feedback: this can be used to teach clients how to produce alpha waves, associated with a relaxed mind state. Sarnoff suggests using biofeedback to switch the locus of control of the patients, meaning they can learn how to feel in control of their own psychological and bodily state. This sense of control could have a good influence on people's sense of agency and therefore make them feel more responsible and in control of the actions connected to their mental condition: Sarnoff, for instance, suggests using biofeedback with depressed patients to support them in breaking out of the depressive cycle of inactivity. Altogether, we can say that already in the Eighties Sarnoff pointed out how these techniques could be useful as a screening and assessment but also as a monitoring during the psychotherapeutic process: nevertheless, he advocates that using GSR biofeedback could be useful to better read the clients behaviors and help the counselor empathize with them (Sarnoff, 1982).

A more recent contribution on how biofeedback is used in clinical contexts was given by Valeska Kouzak and colleagues in 2020: I am here reporting the list of the most common applications of biofeedback they collected. I am not going to describe how the measurement devices work, but I think the following list is going to extend the knowledge we have regarding the biofeedback techniques: 1) Galvanic Skin Response (GSR); 2) Temperature Biofeedback; 3) Respiratory biofeedback; 4) Surface Electromyography Biofeedback (sEMG); 5) Heart Rate Variability Biofeedback; 6) Electroencephalography (EEG) Biofeedback or Neurofeedback; 7) Functional Magnetic Resonance Neurofeedback (rt-fMRI); 8) Functional near-infrared spectroscopy (fNIRS) Neurofeedback (Kouzak et al., 2020)

The authors conclude altogether with the variety of contexts biofeedback can be used in psychology: first, to manage stress in anxious patients, which has been the most widespread application of biofeedback since the Seventies, by managing alpha waves in neurofeedback training, as well as with HRV in which it is achieved when breath and heart rate frequency are consonant; secondly, to manage the hyperactivity of children ADHD children; thirdly, with the acknowledgment that depression is associate with activation differences between hemispheres, neurofeedback could be precious to balance this difference (ibidem). Nevertheless, I agree with Kouzak and colleagues in advocating for a form of biofeedback as a complementary tool to psychotherapeutic practice, to

enhance patients' self-esteem and agency, decrease suffering and provide live feedback on their progresses, always beware that further research on more heterogeneous populations is needed to definitively test clinical efficacy (Lehrer, 2017).

2.2.1 Non-technological biofeedback and a more inclusive psychotherapy

Whilst advocating for a more inclusive psychotherapeutic practice, Paul Lehrer points out the inconsistency of how often the physiological part of the psycho-behavioral human functions is ignored: if humans own a cognitive, somatic and behavioral part, Lehrer claims that most of the efforts in psychotherapy over the past 30 years have focused on the cognitive component. He considers how psychophysiological techniques, aside from biofeedback, are typically considered part of CBT and thus are reimbursed without much question (Lehrer, 2017). For instance, progressive muscle relaxation therapy, which directly addresses musculoskeletal tension and sympathetic arousal, falls into this category. It is unclear why this highly effective psychophysiological intervention, essentially the same as sEMG biofeedback but utilizing a training method without a machine, is permitted while the use of a biofeedback machine to enhance training is not. Similarly, mindfulness training is generally viewed as an integral component in acceptance and commitment therapy and dialectical behavior therapy, two largely recognized forms of CBT. However, mindfulness training typically involves focusing mentally on physical sensations, making it very similar to various forms of biofeedback and neurofeedback, he argues (*ibidem*).

However, a common feature across all behavioral treatments is the relatively limited scope of validation studies demonstrating efficacy, particularly when compared to studies examining pharmacological agents. This is largely due to the limited funding allocated for evaluating non-drug treatments. As a result, most studies on behavioral treatments fall into the category of "Phase I" studies (focused on safety and efficacy in uncontrolled trials) or "Phase II trials" (involving controlled studies within carefully selected patient populations and tightly controlled research environments). Large-scale "Phase III trials", where methods are tested on hundreds of individuals in real-world clinical settings, are almost non-existent in this context.

2.3 Overcoming the classical definitions of biofeedback.

Within the last ten years, research has focused more and more on how physiology can be a shared concept: scholars have started trying to measure the relationship between people's physiological dynamics, for instance, through continuous measures of the autonomic nervous system (ANS) as in the case of Interpersonal Autonomic Physiology (IAP).

The Autonomic Nervous System (ANS) predominantly comprises the Sympathetic Nervous System (SNS) and the Parasympathetic Nervous System (PNS), which cooperatively regulate internal bodily functions such as cardiac, respiratory, and glandular activities. These branches function in concert, adjusting dynamically to address current internal and external environmental conditions. The intricate interplay between the SNS and PNS can be assessed using various techniques, each with its own distinct characteristics (Critchley, 2002; Yerkes & Dodson, 1908). As Richard V. Palumbo and colleagues brilliantly point out, while ANS activity serves as a reliable indicator of physiological arousal, it does not convey information regarding emotional valence (positive or negative appraisal) or contextual factors. Consequently, supplementary measures are necessary to discern between physiological responses attributed to cognitive tasks like mental calculations, physical activities such as exercise, or emotional states like anger (Russell, 1980; Russell & Barrett, 1999).

2.3.1 Interpersonal Autonomic Physiology: A Review by Palumbo and colleagues

Generally, the research on interpersonal physiology is very fragmented and the terms used to describe overlapping processes are disparate, but using Physiological Synchrony as a general category to describe “any interdependent or associated activity identified in the physiological processes of two or more individuals”, Palumbo and colleagues have reviewed the existing work in the field (Palumbo et al., 2017, p. 100).

The presence of physiological synchrony (PS) does not necessarily imply interpersonal relationships, as factors like shared environments and concurrent activities can also lead to PS. Similarly, correlations between PS and other variables do not indicate causality. When individuals' physiological responses align over time, it suggests similarities in their physiological experiences, possibly due to shared dependence on external variables. For example, watching the same show in different locations can result in synchronized physiological responses, illustrating alignment in reaction to the external stimulus rather than direct interaction between individuals.

Palumbo and colleagues (2017) and Kleinbub (2017) both underscore the multiplicity of terms used in literature to describe overlapping phenomena: in Palumbo and colleagues' research, more than a dozen different terms describing IAP were identified. Most studies used terms based on observed phenomenon such as synchrony, whereas others used terms such as sociophysiology to describe a general methodological approach. Others failed in referring to either one or the other category. The authors identified six key parameters that have been used to further define PS: 1) magnitude: the strength of synchrony, measured via regression or correlation coefficient. The higher the magnitude, the higher the interdependence; 2) sign: positive or negative, indicates whether people's arousals move in the same or different direction; 3) direction: the predictability of one

person's physiology from the other's; 4) lag: shift in temporal alignment of data, indicates when a pattern in one person is followed by a pattern in the other. Palumbo and colleagues' study mentions that, for instance, in a study on clinical dyads that will be further explored later in this thesis, Messina et al. (2013) found that the lag of significant cross-correlations between empathy and PS differed based on therapist's level of training: this was interpreted by Palumbo and colleagues as a proof that better-trained therapists are more able to maintain empathy with clients (Palumbo et al., 2017); 5) timing: the length of time that a given interaction is assessed or observed. For instance, synchrony measured within seconds or minutes - a short time scale - may reveal patterns related to transitory interactions, whilst synchrony measured within hours or days - a long time scale - could show processes that take longer to develop. Both are equally valid approaches, but results could be indicative of different types of processes, and this is problematic in the research field; 6) arousal: measuring people's arousal could lead to seeing it as a covariate or moderator of PS.

Another idea explored in research literature is asynchrony, defined by Rebecca Reed and colleagues as the absence of observable psychological synchrony (PS) (Reed et al., 2012). While difficult to confirm without using various models to evaluate PS, the concept of asynchrony is important as it highlights differences between individuals (i.e., magnitude = 0). Studies have shown that asynchrony can predict specific types of relationships (Reed et al., 2012), suggesting that recognizing periods lacking PS can provide insights into interactions. As Carl D. Marci and Scott P. Orr notice, for instance, asynchrony might occur during an interaction if an individual disregards their partner's state (e.g., Marci & Orr, 2006), or if one member fails to synchronize with others in a group (Palumbo et al., 2017).

2.3.1.1 Correlates of PS in literature

According to Palumbo and colleagues' review, studies investigating IAP began more than 50 years ago, when some scholars discovered significant positive and negative correlations in the EDA and HR of therapists and clients during therapy, that they took as evidence of therapeutic rapport and empathy (Palumbo et al., 2017). Specifically, R. Coleman and colleagues found that therapist notes from sessions with high positive correlations in HR had fewer references to being distracted from therapy than sessions with low correlations in HR. In addition, the authors noted that all clients showed reduced HR with one particular therapist, potentially an early example of stress buffering (Coleman et al., 1956). Palumbo and colleagues report that contemporary research utilizing similar methods supports these results, indicating significant relations between PS and empathy, as well as

attention, as in the studies by Marci and Orr (2006) and Marci and colleagues (2007). These two studies will be further taken into consideration in the following chapters of this thesis.

Throughout the literature, PS has been considered evidence of several psychosocial constructs, including empathy, being the most commonly considered psychosocial explanation of PS: Palumbo and colleagues specify that from the original studies by A. Di Mascio (1955) until nowadays, researchers have considered the possibility that experiential connections that define emotional empathy are mirrored in physiology (see Hatfield, Cacioppo and Rapson, 1994; Preston & de Waal, 2002). Palumbo and colleagues notice that these discoveries suggest that the ANS reflects an element of shared experience, therefore PS may be an objective measure of internal processes associated with an empathic interaction (Palumbo et al., 2017). R. Grove suggests an exploration of the therapeutic utility of PS through group biofeedback (Grove, 2007); however, the research findings that show an association between PS and empathy are highly diverse, with part of the results indicating these constructs as independent: it is not yet defined whether PS correlates with emotional empathy or to some other construct. Palumbo and colleagues suggest future research to address the question: is a subtype of PS specific to empathy?

As the authors notice, it is problematic that the establishment of physiological synchronization among two or more individuals doesn't seem contingent upon (a) shared circumstances like behavior or environment, (b) a particular sensory mode of communication, or (c) psychosocial factors such as valence or the type of relationship (Palumbo et al., 2017). Other issues include that PS is predictive of other variables. The research results seem to depend on the context in which a specific type of PS occurs: for instance, as the authors report, high magnitudes of positive physiological synchronization (PS) during conflicts were determined to be indicative of dissatisfaction within marriages (Levenson & Gottman, 1983, using an index of measures), whereas during psychotherapy (Marci et al., 2007, using skin conductance) and gaming (Henning et al., 2001, using HRV, skin conductance, and respiration), high positive PS was found to correspond to greater empathy and improved team performance. "This type of synchrony has been interpreted as both a feeling of being "locked into" negative conflict (Levenson & Gottman, 1983) and connected and understood during positive interactions (Marci et al., 2007)" (Palumbo et al., 2017, p. 124).

Altogether, none of these findings suggest whether individuals can recognize and report when some aspect of PS is occurring or not. Numerous studies have related PS with self-reports of co-occurring psychosocial constructs, suggesting a reportable component to PS, for instance, in Marci and colleagues' study: they found that clients' reports of therapist empathy were positively correlated

with the magnitude of PS. Clients therefore had a reportable experience of feeling more understood when PS was higher (Marci et al. 2007). Similarly, Chatel-Goldman and colleagues found that couples reported greater empathy when their PS was higher (Chatel-Goldman et al., 2014)a. While these findings imply that individuals might possess the capability to acknowledge and convey when their physiological rhythms align with others', this aspect has not been directly investigated (Palumbo et al., 2017). Notably, there is currently an absence of evidence to indicate whether such alterations in PS would lead to or be associated with changes in other factors. A new question arises from the reviewers: “if partners intentionally increased their PS, would affective empathy or interpersonal understanding also increase?” (Palumbo et al., 2017, p. 125)

Based on their analysis of the literature, it is evident that Palumbo and his team have made noteworthy contributions toward assessing the current state of the field up until 2017. Despite the limited literature available on physiological synchronization yet, it remains crucial to identify potential issues within the research domain. This allows us to avoid repeating past mistakes observed in other areas of study, such as empathy research explored in the first chapter.

2.3.2 State of the art by J.R. Kleinbub

In the same year of the review by Palumbo et al., Johann Roland Kleinbub reported some overlapping – and non-overlapping - issues emerging from the literature: for example, the fact that, as previously mentioned, a consensus on the core mechanisms and on the meaning of Interpersonal Physiology has not been reached yet. Marci and colleagues’ work in 2007 - that will be better discussed later - has initiated the rediscovery of IP, leading to an increase in published articles on the topic. As Kleinbub points out, almost 30% of the corpus was published between 2016 and 2017: however, the whole corpus is still objectively small, with only 9 publications between 2010 and 2017 (Kleinbub, 2017). Similar questions to the ones of Palumbo et al. emerge from his research:

“Knowing that IP correlates with patients perceived empathy (Marci et al., 2007) has been a great incentive to foster this line of research, but, on the other hand, is a very general, and quite uninformative kind of observation. We need to start asking more specific questions, such as: which specific empathic components are responsible for IP? What fundamental intersubjective processes IP does represent?” (Kleinbub, 2017, p. 6).

The absence of precise detail poses a significant challenge in grasping the clinical significance of interpersonal physiology (IP). For example, although its significance in clinical interactions is widely acknowledged, empathy is not a straightforward or singular phenomenon. Rather, it involves the interplay of various elements, spanning from fundamental emotional processes to

intricate cognitive and social aspects, each with distinct neurobiological mechanisms at play (e.g., Coutinho et al., 2014).

Kleinbub draws on the pre-cited study by Palumbo to mention that except for L.T. McCarron and H.V. Appel (1971), none of the studies analyzed employed IP as a predictor of a precise theoretical dimension. Five studies did not specify any theoretical interpretation for their data, 2 referred generically to embodiment theory, 2 to system models, 2 to alliance, and most (n = 6) to empathy, reflecting the general trend of IP literature outside the clinical setting (Kleinbub, 2017; Palumbo et al., 2017). Finally, Kleinbub underscores how the implicit assumption present in most studies that “more IP” (in whatever way one may choose to measure it) is always better, might be an oversimplification” (Kleinbub, 2017, p. 7). As it has already been investigated in some studies, more IP is not a guarantee of positive interpersonal outcomes (*ibidem*). Even if verifying this information falls out of the purpose of this research, it is important to advocate that a better theoretical model would allow scholars to: test theory-driven hypotheses on what amount of IP is advisable, in what context, if the lack of IP or phase opposition could have clinical meanings, and how to correctly assess and interpret lagged synchrony and causal direction is needed (*ibidem*). Interpersonal Physiology (IP) in psychotherapy has been documented by numerous independent scholars, and its presence, particularly concerning skin conductance (SC) and cardiac activity, can be deemed firmly established. Yet, its dynamics and clinical significance remain largely unexplored, though there are compelling indications that the phenomenon could be linked to a rudimentary manifestation of affective empathy, such as emotional contagion (Kleinbub, 2017; Coutinho et al., 2014).

Taken together, Palumbo et al. (2017) concluded that psychophysiological synchronization likely helps to be informative of the state of a relationship (p. 29). Kleinbub (2017) analyzed 19 studies that focused on the synchronization of interpersonal physiology indices in clinical contexts and concluded that the majority of studies reported a positive association between psychophysiological synchronization and empathy, although most studies did not explicitly refer to a specific model or definition of empathy. To conclude this section, I would like to mention Kleinbub's insightful intuition that the studies analyzed above, while still in their early stages, have the potential to create a tool that can identify the subtle moment-to-moment adjustments that occur between a patient and their therapist. The realization of such a tool would signify a significant paradigm shift in clinical process research, providing a fresh array of objective and, in many instances, automated assessments: this idea will be better surveyed in the third chapter of this thesis.

2.4 A call for embodied and psychophysiological approaches

Considered all the studies analyzed until now defining interpersonal synchronization as a representation of a shared mental state between patient and therapist, a consequence is that it may be possible to indirectly study the functioning of Mirror Neuron System by using psychophysiological techniques (Ramachandra et al., 2009). As a matter of fact, Marci and Orr (2006) and Marci et al. (2007) likewise found a direct correlation between the amount of patient-therapist psychophysiological synchronization and the level of empathetic understanding that patients felt from their therapists. In addition, Palmieri et al. (2018) demonstrated that priming the sense of attachment security in therapists influenced their psychophysiological synchronization in clinical dyads, as compared with a control group in which therapists received a prime not related to attachment, a result in line with novel developments in the attachment field suggesting that therapists of different attachment classifications may attune to patients in distinct ways (Talia et al., 2017). These findings suggest the idea that the shared psychophysiological activation can represent an eligible candidate of a somatic mirror mechanism, as suggested by Oberman and Ramachandra (2008), by means of a joint functioning of the cardiac and electrodermal dynamics, underlying the idea of engagement dynamics (Di Paolo & De Jaegher, 2012).

Moreover, from a complementary neuroscience perspective, as suggested by Kleinbub et al. (2019), there is indeed a strong link between autonomic physiology and central nervous system mirror mechanisms due to the central autonomic network (CAN), which is thought to serve as a crucial link between the brain and physiological dynamics (Beissner et al., 2013; Gallese, 2013). The CAN includes the anterior cingulate, the ventromedial prefrontal, the insular cortex, the amygdala, and the hypothalamus and is more active in the right hemisphere. These interconnected components, together with higher-order cortical functions that regulate the response of subcortical structures, seem to control the autonomic input and output of psychophysiological variables, such as heartbeats and electrodermal activity. This functional and anatomic link between central and peripheral areas suggests that the physiological regulations that are negotiated during the interpersonal exchange in clinical interaction, are directly connected to crucial functions of our brains related to empathy.

Overall, almost all of the research cited here can be taken to suggest that psychophysiological synchronization is easily achieved via simple means, occurs under a variety of conditions, and is indeed hard to avoid (De Jaegher & Di Paolo, 2008; Palumbo et al., 2017).

2.4.1 Embodied cognition

I will now proceed with a quick overview of the repeatedly mentioned topic of embodied cognition, which I believe is deeply intertwined with the quasi-totality of the just mentioned studies. I will start

following the definition based on the Stanford Encyclopedia of Philosophy that defines cognition as embodied “when it is deeply dependent upon features of the physical body of an agent, that is when aspects of the agent's body beyond the brain play a significant causal or physically constitutive role in cognitive processing” (The Stanford Encyclopedia of Philosophy, Summer 2017 Edition). Embodied cognition draws partially on phenomenology - to say the discipline that delves into the essence of people’s conscious, lived experiences. The subjects of phenomenological analyses can range widely from perception to imagination, emotion, volition, and deliberate physical movements: all these analyses aim to elucidate the intentional framework of consciousness. They achieve this by dissecting our conscious experiences in terms of temporal, spatial, attentional, kinesthetic, social, and self-awareness dimensions. In contrast to computational theories of the mind, which conceptualize consciousness in terms of input, processing, and output, phenomenological theories ground consciousness in a multitude of rich and diverse attentional experiences, which can be described and analyzed through practice.

Some variants of embodied cognition draw inspiration from the works of phenomenologists such as Edmund Husserl (1929), Max Scheler (1913), Edith Stein (1917), Maurice Merleau-Ponty (1962) Jean-Paul Sartre (1943) who emphasize the physical embodiment of our conscious cognitive experiences. These thinkers examine the various ways in which our bodies influence our thoughts and our experience of conscious activities. Some even argue that consciousness is inherently tied to embodiment. For instance, Merleau-Ponty suggests that consciousness itself is embodied. This influence of phenomenology is evident in embodied cognition analyses of the relationship between mind and body. Such analyses reject the notion that mentality is fundamentally distinct and separate from physicality, and the associated idea that others' mental states are somehow concealed. Drawing from the insights of Husserl and other phenomenologists, proponents of embodied cognition argue that Cartesian-style analyses of the mind and body fundamentally misinterpret cognition. They propose that cognition is not primarily or typically an intellectual but inherently interactive and embedded in physical contexts and bodies. Even contemporary philosophers and cognitive scientists who reject mind-body dualism may still inadvertently treat mental and physical phenomena as distinct. However, from the phenomenological perspective, all cognition is inherently embodied, interactive, and embedded in dynamically changing environments. By paying attention to how our conscious experiences are structured by our bodies and environments, it becomes evident that there is no substantial distinction between mind and body. The embodiment of cognition renders our own and others' minds as observable as any other aspect of the world. In other words, a phenomenological analysis of our conscious experiences reveals the Mind-Body Problem and the Problem of Other Minds to be illusory. This phenomenological analysis of the relationship between mind and body and

our interaction with other minds has deeply influenced proponents of embodied cognition such as Shaun Gallagher (2005), Dan Zahavi (2005), and Evan Thompson (2010).

2.4.1.2 The Purpose of Embodied Cognition

In addition to its traditional domains such as language, perception, memory, and categorization, embodied cognition has been employed to investigate other psychological domains using its concepts and methodologies. Particularly, we will see how it intersects with social cognition.

Social cognition refers to the ability to comprehend and engage with other agents. While a diverse range of cognitive abilities is involved in social cognition, including attention, memory, affective cognition, and metacognition, philosophical discussions have traditionally narrowly conceptualized it in terms of mentalizing (also known as theory of mind or mindreading). Mentalizing involves attributing mental states, often limited to propositional attitudes, typically to explain and predict others' behavior (The Stanford Encyclopedia of Philosophy, Summer 2017 Edition).

Despite the involvement of numerous cognitive processes in social cognition, many philosophers have traditionally viewed it simply as the attribution of propositional attitudes to understand and predict behavior. Recent philosophical trends have expanded the conception of social cognition. Embodied cognition theorists reject this narrow understanding of social cognition. While they acknowledge that neurotypical adults possess the ability to attribute beliefs and desires to others and to explain and predict behavior, they argue that this is a specialized skill used infrequently in our daily social interactions. Instead, most social interactions rely on basic underlying social cognitive capacities termed primary and secondary intersubjectivity (*ibidem*).

Primary intersubjectivity refers to the innate, non-conceptual, embodied understanding of others that underpins and supports higher-level cognitive skills such as mentalizing. It involves the ability to perceive in others' bodily movements, facial expressions, eye movements, and so on, their intentions and emotions. Primary intersubjectivity is present from birth and continues to serve as the foundation for social cognition throughout life: it manifests as the ability to imitate facial expressions, detect and follow eye movements, discern intentional behavior, and infer emotions from others' actions and expressions. According to embodied cognition theorists, primary intersubjectivity entails informational sensitivity and appropriate responsiveness to specific environmental cues. It does not involve representing or theorizing about those cues but rather requires practical abilities shaped by evolutionary pressures, such as sensitivity to certain bodily cues and facial expressions (*ibidem*).

Around the age of one, neurotypical children develop secondary intersubjectivity, which enables them to transition from one-on-one immediate intersubjectivity to shared attention. At this stage, children learn to follow others' gazes, point, and communicate with others about shared objects

of attention. Embodied cognition proposes that the cognitive skills acquired through secondary intersubjectivity are not complex, metacognitive representations of other minds but rather practical skills in directing others' attention and attending to objects of shared attention. Although described in developmental terms, primary and secondary intersubjectivity are believed to constitute our primary mode of social cognition even in adulthood. This perspective challenges the assumption that mentalizing is the primary mechanism of social cognition and suggests that most social interactions rely on embodied, non-representational understanding of others' behavior.

Mirror neurons - whose discovery and importance have been debated within the first pages of this thesis - are proposed as a key mechanism in this view of social cognition. Mirror neurons provide a mechanism for understanding others' mental states without resorting to complex, high-level inferences about behavior and mental states. Instead, observing others' behavior activates similar neural patterns as if the observer were performing the action themselves, making the behavior automatically meaningful to the observer. Mirror neurons are seen as a potential mechanism for embodied social cognition, suggesting that we can understand and interact with others without relying solely on mentalizing. However, the interpretation of mirror neuron findings is subject to debate, and caution is warranted in concluding their role in social cognition.

De Waal and Preston present a comprehensive view of empathy in mammals, defining it as a process where observers understand others' states by activating their own personal, neural, and mental representations. They use empathy as a broad term encompassing various processes, including affective resonance where observers feel distress similar to the target, but note that outward signs of empathy are not always necessary. Empathic accuracy varies depending on factors like attention, motivation, and personal experiences. While empathy can lead to helping behavior, it's not the sole motivator for assistance, as other factors also play a role. Higher-level processes like simulation and cognitive empathy are considered part of empathy, even if they require additional cognitive processes. Motor mimicry, a form of empathy, occurs as a natural consequence of the neural system mapping others' expressions onto the observer's own representations, facilitating synchronization between targets and observers (De Waal and Preston, 2017).

When individuals observe others' emotional states, their empathy and accuracy vary depending on personal and situational factors. These can be influenced by attentional diversion or suppression of emotional and physical responses. Empathy and accuracy improve when the observer's experiences align with the target's emotions. It's not possible to categorize experiences as simply "the same" or "different", nor to determine empathy or accuracy in a binary manner. Shared emotional representations may not always lead to resonance or assistance, especially if the observer's goals conflict with the target's. In cognitive empathy, shared representations are activated through higher

cognitive processes, yet there's often an overemphasis on distinguishing emotional and cognitive empathy. Both types rely on accessing shared emotional representations for meaningful understanding (De Waal & Preston, 2017).

Overall, embodied cognition offers a holistic framework for understanding social cognition, emphasizing the role of embodiment and interaction in shaping our understanding of others and our social interactions: through the lens of embodied cognition, in fact, it is possible to explain how emotions are perceived through the body and that if emotions are shared during dyadic encounters, then the embodiment could be shared too. Even though the presented definitions of embodied cognition do not exhaust the possible reflections on the topic, this section aimed at complementing the information regarding physiological synchronization in the psychotherapeutic setting, field in which embodied cognition could serve as a theoretical bridge, linking empathy and biofeedback.

2.4.2 Synchronization in patient-therapist dyads

Intending to investigate the patient-clinician bond under biopsychosocial terms, Herbert M. Adler specifies that his use of “psychophysiology” preserves its original meaning as an interpersonal physiological engagement, occurring in real time and “having continuous here-and-now physiologic consequences” (Adler, 2007, p. 281). Given that the mirror neuron system, as discussed in Chapter 1, is linked in both humans and monkeys to regions of the brain essential for identifying facial expressions and emotional actions, witnessing emotions can impact the observer's emotional state. Thus, the mirror neuron system could offer a neurobiological basis for interpersonal empathy (Adler, 2007).

In the context of the patient-physician relationship, sociophysiology involves two intertwined mechanisms: 1) intrapsychically, social experiences that are anticipated, planned, or remembered are deeply entwined with the individual's physiological responses; 2) interpersonally, social connections exert an influence on physiology, and vice versa. For humans, these processes are often indistinguishable since individuals frequently carry imagined social interactions even when alone, which is reflected in their physiology. Thus, even between medical appointments and over extended periods, the biopsychosocial relational dynamic persists. (*ibidem*).

Empathy encompasses both the personal perception of attuned interpersonal neurobiology and the ongoing process of achieving this harmony—where reciprocal responses lead to greater synchronicity. Notably, even minor adjustments made by either the patient or the physician can trigger significant neurobiological shifts. Herein lies the therapeutic power of clinical empathy, defined as the physician's utilization of empathic processes to directly impact the patient's psychobiology. Caregiver-infant interaction studies offer valuable insights into the process and

therapeutic potential of interpersonal neurobiology. Shortly after birth, caregivers and infants engage in a reciprocal exchange of responsive behaviors, primarily conveying emotions. Through such interactions, caregivers and infants co-regulate each other's psychobiology, with the caregiver's self-regulatory abilities acting as an external guide for the infant's bio behavior. When successful, they establish a unique relationship characterized by attunement—a process that enhances the infant's neurobiological stability and fosters resilience and self-regulation. I suggest that empathic clinicians can similarly leverage relational processes to directly influence biological treatment outcomes. As Adler reports in his article, D. A. Matthews and colleagues have described the emotions associated with "connexional moments" in medical encounters as the epitome of effective empathy. Essentially, they argue that effective empathy is the subjective experience of a beneficial harmony within a biopsychosocial relational dynamic (Matthews et al., 1993).

To conclude this chapter, I would like to keep an eye open on what Adler stated in his 2007 article: “While biopsychosocial responsiveness between patients and physicians is reciprocal and mutual, it is not symmetrical because patients and society grant clinicians the responsibility to focus attention and treat biological and psychological aspects of a patient’s disease” (Adler, 2007, p. 282). Although we saw that clinical empathy assumes certain degrees of asymmetry, in the section about epistemic injustice we also investigated how asymmetry can assume different meanings in clinical contexts, such as disparity and disregard toward the patient’s needs, co-causing epistemic injustices. I advocate for the need to understand whether the physiological properties of the dyadic interaction just explored are somewhat important for future research on clinical empathy or if they will follow diverse paths: is empathy underlying interpersonal synchronization or the rapport works vice-versa? In Chapter 3, I am going to investigate first, the physiological mechanisms related to empathy and then move further with a recent discovery that could definitively connect the two topics: interpersonal biofeedback.

CHAPTER 3: THE CRITICAL BOND BETWEEN EMPATHY AND BIOFEEDBACK

3. Introduction

In the previous two chapters, empathy and biofeedback were explored, with an original critic through the lenses of epistemic injustice - Chapter 1 - and a focus on a specific branch of biofeedback therapy: interpersonal physiology, or physiological synchronization – Chapter 2. Chapter 3 will be useful to wrap up the main motives of why I chose to analyze these two topics together in this thesis work. Throughout this chapter, I am going to describe and criticize how empathy and physiological synchronization have been fundamentally tied throughout recent literature works and what are the latest frontiers of physiological investigation in clinical dyads.

3.1 The studies on synchronization-related empathy by Marci and colleagues

The assumption at the base of interpersonal physiology gave birth to the groundbreaking studies lead by Carl D. Marci and colleagues: since it has been proven that emotional and attitudinal states have physiological and neurobiological bases, it seems logical that shared emotional and attitudinal states would also have shared physiological and neurobiological bases (Marci et al., 2006).

Their first study investigated whether altering the level of emotional distance between an interviewer and a patient could impact the level of psychophysiological alignment and perceived empathy experienced during their interaction. A consistent correlation between these factors would have implications for developing objective criteria to enhance empathic connection in clinical settings. In the neutral response scenario, the interviewer responded to the patient's verbal and emotional cues in a socially appropriate manner, reflecting typical patient-clinician interactions during a brief semi-structured interview. Conversely, in the emotionally distant response scenario, the interviewer refrained from responding to verbal or emotional cues, maintaining minimal eye contact and limiting nonverbal reactions throughout a similarly structured interview.

The hypothesis posited that the patient-interviewer interaction in the emotionally distant condition, compared to the emotionally neutral condition, would result in significantly lower levels of psychophysiological alignment and reduced perception of empathy from the patient. The observed differences in psychophysiological concordance support the use of this measure as a potential marker of empathy in a clinical population in an interview setting (Marci and Orr, 2006, p. 123). Marci's team speculation is that, during moments of high physiological concordance in the emotionally neutral condition, there are more shared internal and external cognitive and emotional representations between the patient and the interviewer resulting in a more synchronous pattern of arousal. In contrast, during moments of low physiological concordance in the emotionally distant condition, the cognitive

and emotional stimuli are discrete, dissimilar, and more idiosyncratic resulting in more discordant changes in SC levels.” (Marci and Orr, 2006, p. 124)

Marci and Orr argue that using psychophysiology as an index of empathic connection, following further validation, offers several advantages over current approaches. In their opinion, the measures are biologically based and free of the self-report and observer bias found in most empathy research tools. Regarding this argument, I believe that observer bias may definitely be an obstacle on the therapist’s side – for instance, as the similarity bias described in Chapter 1 - but self-report, as argued in previous sections of this thesis, could be an active measure of empathic bounding, being a spontaneous version of the patient narrative on their own mental state. What should not be overlooked is the potential dissonance between the patient narrative and their physiological reactions, even though my argument stands for prioritizing the patient’s narrative because it could give us information about their defense-mechanisms (in case of psychodynamic therapies) or cognitive structure (in case of, for instance, CBT therapies). Broadly, the patient’s narrative informs us of their interpretation of the elements of reality.

Marci and Orr's second argument supporting their thesis asserts that Skin Conductance, regulated uniquely by the sympathetic branch of the autonomic nervous system, remains unaffected or obscured by parasympathetic and other neuro-hormonal influences. This characteristic aids in simplifying interpretive models (Lidberg & Wallin, 1981). Additionally, the technology employed in gathering psychophysiological data is relatively cost-effective compared to neuroimaging methods. Moreover, the emergence of new sensor technologies, which are minimally intrusive, facilitates continuous monitoring of social interactions across various clinical environments. Lastly, there exists a growing comprehension of the neurobiological mechanisms governing SC responses. This heightened understanding, coupled with other neuroimaging investigations on empathy, along with evidence supporting physiological alignment during social exchanges as proposed by the present study, presents promising avenues for constructing clinically relevant models of empathic awareness (Marci and Orr, 2006).

In a larger study the following year, Marci and colleagues drawn on Bohart’s meta-analysis (2002) that confirmed the modest but consistent relevance of empathy during psychotherapy and concluded the relationship between perceived therapist empathy and outcome during psychotherapy as well-established. Therefore, Marci and colleagues use psychophysiology as a bridge between central nervous system responses and clinically relevant factors such as patient-perceived empathy and social-emotional process during psychotherapy, together with a simultaneous measurement of physiological changes in a clinical population during clinical sessions (Marci et al., 2007). In this study, they applied SC measurement to real clinical dyads.

Their findings propose the existence of a distinct neural network for empathy and emotional responsiveness, informed by recent advancements in our understanding of "mirror" mechanisms in humans, which are implicated in the capacity to adopt another person's emotional perspective. These mechanisms demonstrate that neurons react similarly when an individual observes an action as when they perform it themselves. Consequently, there is a growing body of evidence supporting a definition of empathy and sympathy that involves a "shared representational network," generating common representations of mental states for both "self" and "other" (Decety and Sommerville, 2003). This ability engages the prefrontal cortex, which plays a crucial role in coordinating and distinguishing these cognitive representations. Therefore, it is not unexpected in the current study that a measure of Skin Conductance (SC) concordance between established patient-therapist pairs during psychotherapy correlates with patient perceptions of therapist empathic connection and shared positive social-emotional states. If similar brain networks are implicated in both empathic and autonomic responses, then vicarious and empathic experiences may be regulated via a shared or concordant neuropsychobiology of representational networks.

Physiological systems undergo continuous fluctuations, influenced by a multitude of factors within an individual's internal regulation and maintenance of balance (Porges and Bohrer, 1990). Consequently, existing models are unable to fully capture the complexity of physiological processes such as Skin Conductance (SC) within arbitrarily defined time frames (e.g., minutes, hours, days). Marci and his colleagues propose that developing a biologically grounded clinical model of empathy, coupled with a cohesive two-person psychology framework, could reinforce the significance of humanistic and relational factors within clinical practice. Considering that the absence of perceived empathy has been consistently identified as the most reliable predictor of unfavorable outcomes in psychotherapy, Marci et al. argue that both therapists and their patients could potentially gain substantial advantages from future research endeavors aimed at deepening our comprehension and enhancing our ability to engage with this vital clinical psychosocial construct. I will advocate against this brilliant but – from my perspective - incomplete vision within the following section, through Vittorio Gallese's works analysis.

3.1.1 Embodied cognition and second-person approach to empathy

Drawing onto Marci and colleagues' proposal of simplifying the measurement of physiological substrates of empathy and underlining their awareness that "any SC concordance algorithm is at best an approximation of the intrapersonal and interpersonal dynamics under investigation" (Marci et al., 2007, p. 109), I argue that oversimplifying might be a risky solution. Marci and colleagues underline that mirror mechanisms and consequent shared mental representation need to be further explored.

On this topic, Vittorio Gallese proposes that Embodied Simulation, driven by Mirror Mechanisms, has a central role in some mindreading forms, and that it does not require any specific attitude, but it is mapped onto mental representations with a bodily format (Gallese, 2013). He suggests that we cannot experience other people's experience directly, but perceive them as similar to ours. Embodied simulation posits that the experience of others' intentional behaviours relies on the intrinsic organization of the motor system of primates – and therefore of humans. Hence, that would make Embodied Simulation only one of the several ways of understanding others (Gallese, 2013).

Based on Gallese's analysis, dyadic relations do not differentiate by their object, but by the epistemic status adopted by the I. As Marci and colleagues did, he suggests to adopt a second-person approach: this should differ from the third person approach because it defines a different epistemic approach to the problem of other minds, by reducing the mental gap apparently separating patient and therapist – in the clinical encounter – (Gallese, 2013).

“We can challenge the idea that a theoretical metarepresentational approach to the other is the sole/main key to intersubjectivity. Mindreading, as conceived of in a broad sense, could designate our understanding of others allowed by the possibility to map the other onto the self, reciprocated by the mapping of the self on the other. Mindreading in a narrow sense should instead qualify intersubjectivity only when a more explicit need for explanations requires less engaged, more third-person like types of relations. I posited that before and below both types of mindreading is the fundamental relational nature of action (see Gallese, 2003, 2007).” (Gallese, 2013, p. 2955)

Gallese sustains that the discovery of Mirror Neurons gives us a new evidence-based notion of intersubjectivity connoted primarily as “intercorporeality” – the mutual resonance of intentionally meaningful sensorimotor behaviours” (Vittorio Gallese, 2018, p. 34). The ability to understand others as intentional agents does not exclusively depend on propositional competence, but it is in the first place dependent on the relational nature of action. According to this hypothesis, it is possible to directly understand others' basic actions by means of the motor equivalence between what others do and what the observer can do. In his previous works (2006), Gallese had already suggested that since multiple Mirror Mechanisms are present in our brain, these mechanisms generate “intentional attunement”, and therefore allow us to recognize others as our fellows, likely making intersubjective communication and mutual implicit understanding possible” (Vittorio Gallese, 2018, p. 35).

In a dynamic system governed by reversible rules, the observer and observed are intricately connected. Through intentional attunement, "the other" transcends mere representation and becomes

akin to our own bodily self. However, I contend that this belief of a possible complete embodiment of another's physical experience is flawed, leading to potential instances of epistemic injustice, as exemplified and outlined in Chapter 1. Many scholars in the field of epistemic injustice have discredited this analogy, arguing that presuming to fully understand and internalize someone else's emotions is inherently unjust and diminishes their role in shaping their own life narrative.

3.2 Perception of empathy and synchronization

During the past decade, a growing body of literature regarding interpersonal synchronization has taken space into the literature in psychotherapy. As already stated in previous sections of this thesis (see section 2.3), during human interaction, in general, there is evidence that we coordinate our movements, neural activity, voices and physiology with others (Wiltshire et al., 2020). Travis J. Wiltshire and colleagues define the psychotherapy system as consisting of two components – therapist and client – each one with their own sub-systems (e.g., cardiovascular, neural, etc.) influencing each other in their interaction. From their point of view, the way in which system components coordinate is the fundamental element for effective functioning. In this context, interpersonal coordination is regarded as a type of coordination where the variables of both a patient and a therapist evolve in tandem in a structured manner over time. The concept of coordination here aligns with its usage in coordination dynamics, encompassing broader aspects beyond narrowly defined forms like synchronization or alignment (*ibidem*).

Wiltshire and colleagues attempt to elucidate the functionality of interpersonal coordination in psychotherapy, while also acknowledging its limitations: firstly, they suggest that such coordination might stem from common factors inherent to psychotherapy, which transcend treatment types and are known to drive therapy effectiveness. These factors are typically conveyed through social interaction and have been linked to movement coordination and physiological synchrony, both of which are associated with aspects like the working alliance and empathic responding, often regarded as common factors in therapy; secondly, they point to evidence of physiological co-regulation in broader relationship contexts, proposing that this phenomenon may extend to psychotherapeutic settings. They suggest the polyvagal theory as a plausible explanation, which posits that coordinated physiological responses between patient and therapist create a bio-behavioural foundation for feelings of safety, facilitating the progression and success of the therapeutic relationship; lastly, they reference social mentality theory, which suggests that therapists, in assuming a caregiving role, may have a biological predisposition to attune and co-regulate others, drawing parallels to early caregiver-infant relationships that aid in regulating physiology and behaviour. In

their review, Wiltshire et al. focus on interpersonal coordination during psychotherapeutic interactions in any modalities that have been examined including movement, physiology, vocalizations, language, and behaviours, and any psychotherapy processes or outcomes measures of coordination that the modalities have been linked with (Wiltshire et al., 2020).

The studies in Wiltshire's review have predominantly linked measures of empathy to coordination through two main modalities: physiological measures and coordination of voice/language. Specifically, research by Marci et al. (2007), Marci and Orr (2006), Messina et al. (2013), and Robinson et al. (1982) has shown that coordination between patients and therapists in physiological measures, such as skin conductance (electrodermal activity – EDA), is associated with higher levels of empathy. Furthermore, studies by Imel et al. (2014) and Lord et al. (2015) have indicated that coordination in voice/language between individuals is also correlated with empathic interactions. In terms of physiology, the literature suggests that interpersonal coordination in psychotherapy primarily manifests in measures related to the autonomic nervous system, such as heart rate or skin conductance.

Studies examining physiological coordination over time have not revealed a consistent pattern across sessions. However, it is noted that the strength of coordination fluctuates within and between sessions, as evidenced by research conducted by Di Mascio et al. (1955) and Stratford et al. (2012, 2014). Additionally, it's been observed that coordination levels in initial sessions may be correlated with diagnoses, symptom reduction, and dropout rates, as indicated by studies by Paulick et al. (2018b), Borelli et al. (2019), and Paulick et al. (2018a), respectively.

Moreover, physiological coordination has been predominantly associated with measures of empathy and emotion, with studies by Marci et al. (2007), Marci and Orr (2006), and Messina et al. (2013) demonstrating this connection. However, there have not been direct links established between physiological coordination and psychotherapy outcomes. In their previously analyzed reviews, Palumbo et al. (2016) and Kleinbub (2017) have highlighted that the domain of interpersonal coordination, extending beyond psychotherapy, is fraught with terminological and conceptual challenges. These difficulties often intersect with statistical and measurement issues, making it challenging to compare findings across different studies, as noted by Rennung and Göritz (2016).

3.2.1 Measuring EDA in clinical dyads: the studies by Messina et al.

Although a popular critic to physiological measurement associated with empathy is that each autonomic measure might signify a distinct facet of empathy, Oliveira-Silva and Óscar F. Goncalves

proposed that heart rate could serve as an indicator of additive empathy, while interchangeable empathy could be gauged through electrodermal activity (EDA) (Oliveira-Silva & Gonçalves, 2011). The latter, a widely explored response system in psychophysiological research, is among the most commonly employed indices for studying emotions. EDA is based on the recording of skin electrical activity, it relies on sweat secreted by eccrine sweat glands, which are exclusively regulated by the sympathetic system. Consequently, it provides a direct measure of sympathetic nervous system activation.

According to Irene Messina and colleagues, EDA has proven effective in empathy research: individuals with higher empathy scores have exhibited increased EDA responses while tending to crying infants or observing emotional interpersonal scenarios (Balconi & Bortolotti, 2012; Messina et al., 2013). Clinical interviewers have displayed heightened EDA responses when adopting an empathic stance compared to a more distanced one, and certain EDA amplitudes have been predictive of altruistic behaviors associated with empathy (Hein, Lamm, Brodbeck, & Singer, 2011). Consistent with Gallese and colleagues, witnessing another's emotional expression triggers an automatic "embodied simulation" of the other's emotions in the observer's brain (Gallese et al., 2007, p. 145).

In the studies mentioned until this point, physiological and neuroimaging methods have typically been employed in controlled experimental settings to discern the somatic foundations of empathy in individual subjects. I agree with Messina et al. in considering that, although the results provided by the interpersonal physiology approach may concern a physiological component of empathy, physiological concordance and empathy do not coincide: "the physiological response to being exposed to someone who is expressing negative emotions could potentially point in more than one direction: in some it might induce empathy, in others it might lead to avoidance behavior" (Messina et al., 2013, p. 170). Therefore, individual differences in the physiological response are crucial to consider to better understand their emotional and behavioural reactions.

Messina and colleagues tried to compare physiological activation and perception of empathy from the standpoints of all the people involved in a clinical encounter: to do so, they analyzed 39 simulations of clinical interactions involving "pseudo patients" and "listeners" (including therapists, psychologists lacking psychotherapy training, and non-therapists). Messina and her team expanded on the methodology introduced by Marci et al. (2007): their study employed a sophisticated experimental framework, looking into the pivotal concept of empathy from diverse and significant viewpoints: (a) the pseudo-patients' perceptions of empathy, (b) the listeners' self-assessment of empathy, and (c) external judges' evaluations of empathy based on video-recorded experimental

sessions. In the research, participants in the dyads agreed to engage in 20-minute video-recorded sessions. During these sessions, the pseudo-patient was prompted to discuss a personal issue with the listener. Each pseudo-patient participated in three sessions, one with each type of listener, and received distinct instructions from the experimenter for each session. In one session, they were instructed to discuss a problematic situation related to their family relationships; in another, a problematic situation concerning their relationships with friends or colleagues; and finally, a problematic situation concerning their romantic partner or ex-partner (Messina et al., 2013).

The study by Messina et al. (2013) revealed a clear correlation between electrodermal activity (EDA) synchronization within dyads and the empathy levels reported by pseudo-patients on self-report questionnaires. This outcome suggests that physiological synchronization may indeed mirror the empathetic disposition of the listener. These findings align with those of Marci et al. (2007), who also observed a connection between perceived empathy and physiological synchronization in patient-therapist interactions during psychotherapy sessions. Furthermore, these results are congruent with neuroscientific research on the biological underpinnings of empathy, such as the discovery of the mirror neuron system, which some scholars propose as the neural substrate of empathy (i.e., Gallese, 2007). The identification of mirroring activation in the autonomic nervous system suggests an extension of the concept of brain mirroring to encompass the body's propensity to mimic others' states as a foundation for empathic comprehension. I argue that this is compatible with an embodied vision of cognition, therefore an embodied vision on empathic processes (see also 2.4.1). Consequently, the interpersonal physiology approach holds promise for studying real-life human interactions, offering a comprehensive framework for understanding the mirroring phenomenon and empathetic inclinations within a more naturalistic experimental context.

Indeed, Messina's team explain their findings through physiological concordance, given that involves different forms of empathy. In the literature, they recognize at least two forms of empathy that have been described: a sensory one, based on somatic resonance, and a more complex, affective one connected to emotional sharing and social relationship. It could be that empathy as perceived by listeners or as evaluated by external judges may be the result of a common theoretical framework based on the theory that "what therapists have to do is to be empathetic" which is something entirely different from the emotional, experiential perception of empathy. Messina et al. sustain that, instead, physiological concordance and pseudo-patient evaluation may involve more unconscious, non-verbal, aspects of empathy.

They suggest that in the pursuit of an accurate evaluation of empathy, EDA concordance could offer advantages over traditional self-report questionnaires. Messina's study highlights how EDA concordance has the potential to address certain challenges encountered in clinical settings, such as the tendency for patients to feel inclined to seek approval or please their therapist. By providing an objective measure, EDA concordance could serve as a valuable tool in predicting the outcome of psychotherapy and assessing the effectiveness of therapists (Balconi & Bortolotti, 2012; Huang et al., 1998). I would like to point out that labelling the seek of approval and the pleasing behaviours of the patient as "limits" dismisses the patient's epistemic responsibility: gratification and pleasing behaviours constitute important aspects of the client's contribution to the therapeutic process, as they give the practitioner an hint on their mental structure. Therefore, categorizing them as constraints contradicts the principle of suspended judgment inherent in psychoanalysis.

In Messina and colleagues' study on dyads, the therapists consistently scored higher across all empathy-related metrics, particularly in self-perceived empathy compared to non-therapists, and in empathy as assessed by external judges compared to both psychologists and non-therapists. These findings support the hypothesis that therapists possess professional and interpersonal competencies derived from their training in psychotherapy. However, an intriguing observation regarding psychologists came up: after a brief delay, they exhibited significantly lower levels of concordance compared to both therapists and, unexpectedly, non-therapists. It appears that psychologists may have rapidly diminished the immediate empathic connection established with the patient. This decline in psychologists' EDA concordance could potentially be interpreted as indicative of avoidance and associated distress in response to the pseudo-patient's expression of negative emotions.

Taken together, these results support the existence of a mirroring mechanism between EDA, synchronization and people's perception of empathy, but the mediators of this interaction and the direction of EDA and empathy concordance need to be further explored. Anyways, this study accomplished to upgrade the methodology ideated by Marci et al. (2007) and it seems to use accurate lenses to look at further studies.

3.3 Interpersonal physiology of empathy

If the struggle of defining empathy in the clinical field is already overwhelming, as soon as we try to investigate its physiological substrates the difficulty increases, due to the question: what are we actually measuring? As J.R. Kleinbub and colleagues brilliantly point out, the multifaceted term "empathy" directly translates into a "difficulty in the definition of constructs, and thus in the development of valid measurement instruments" (Kleinbub et al., 2019, p. 2).

In light of the expanding body of research on interpersonal physiology, the authors explored the idea that the fundamental empathic mechanism likely has significant physiological foundations. Employing Principal Component Analysis (PCA), they examined concurrent electrodermal activity and heart rate variability signals from a patient-therapist dyads engaged in a 16-session psychodynamic therapy. Unfortunately, assessing the simultaneous activity of two interacting brains in a natural setting to study their shared neuronal activation remains largely unattainable. Evaluating empathy at a central nervous system (CNS) level is hindered by the requirement for expensive neuroimaging equipment like magnetic resonance imaging or electroencephalograms, which greatly limits the ability to study empathy during real human interactions. Consequently, the most promising research endeavours have concentrated on peripheral measures, such as heart rate variability (HRV), skin conductance (SC), electromyography, skin temperature, etc., which provide much greater flexibility in data acquisition (Kleinbub et al., 2019).

As identified by Kleinbub and colleagues, the interesting innovation of Interpersonal Physiology (IP) research is in the study of the simultaneous activation of physiology in both the client and the therapist. These approaches are founded on the strong link between autonomic physiology and the CNS, thanks to the Central Autonomic Network (CAN) which is thought to serve as a crucial link between the brain and the physiological dynamics. The CAN includes the anterior cingulate, the ventromedial prefrontal and the insular cortex, amygdala and the hypothalamus and it is more active in the right hemisphere. These interconnected components, together with higher-order cortical functions regulating the response of subcortical structures, seem to control the autonomic input and output of heartbeats and electrodermal activity. Hence, it may be “possible to indirectly study the functioning of mirror neuron system by using psychophysiological techniques” (Kleinbub et al., 2019, p. 3).

They suggest that IP approach offers a potential solution to the constraints of current empathy measurement methods by: (a) offering an implicit assessment that is not influenced by personal biases or linguistic proficiency; (b) providing a data-driven approach that has the potential to strengthen and unify theories rather than causing further fragmentation; and (c) enabling the collection and automatic measurement of data in natural settings, facilitating easier study and application in clinical practice. Despite the strong connection between IP and empathy, there is still no established standard method for assessing IP, and existing methods have their own limitations. (ibidem). As much as the possibility of an implicit assessment sounds exciting, I argue that implicit and non-verbal behaviours, together with personal narratives characteristics are part of the “material” any therapist is asked to take into consideration and analyse, as much as the explicit elements of their interaction with patients.

In Kleinbub and colleagues' investigation, Principal Component Analysis (PCA) was applied to a dataset comprising continuous and simultaneous recordings of Skin Conductance (SC) and two Heart Rate Variability (HRV) indexes from both the patient and the therapist throughout 16 psychodynamic psychotherapy sessions. Their hypothesis was that PCA could differentiate between physiological variations stemming from self-regulatory processes and those influenced by co-regulatory processes induced by the therapeutic relationship. This differentiation was achieved by identifying components highly correlated (with higher component loading) with either individual's signals (self-regulatory) or both participants' signals (co-regulatory). Their idea is that the common component they identified might represent essential facets of empathy within the therapeutic bond, such as mirroring, mimicry, emotional contagion, and affective response. Since principal components are inherently independent of each other, the existence of this "shared" component, if present, serves as a quantitative measure of empathy, unaffected by other potentially influencing factors. To assess the relevance of this derived measure of empathy in therapy, their analysis focused on a session-to-session predictive capability concerning a psychological outcome measure. In the results of the principal component analysis (PCA), the authors interpreted the proportion of variance explained by the "empathic component" as indicative of the extent of synchronized physiological activation (Kleinbub et al., 2019).

To summarize, in Kleinbub's study, they hypothesized that PCA could effectively discriminate between the individual and shared physiological activity of patients and therapists across 16 sessions of psychodynamic psychotherapy. Their hypothesis was fully supported by the results: PCA identified a shared patient-therapist component (PC1), explaining 34.4% of the variance, along with two distinct components (PC2 and PC3) loading either on therapist or patient signals. The amount of explained variance of PC1, was interpreted by the authors as direct IP measure.

Certain limitations, as emphasized by the authors themselves, merit consideration: their study is exploratory and limited to a single case; hence, the findings cannot be generalized. Additionally, no other measures of empathy were collected during the sessions, precluding the assessment of convergent validity with their index. Replications of the study, encompassing a broader range of dyads and utilizing various instruments probing empathy and other intersubjective processes, will be imperative to validate the utility of the proposed approach in clinical settings. Notably, their findings further bolster the notion that shared psychophysiological activation could serve as a credible candidate for a "somatic mirror mechanism," as posited by Oberman and Ramachandra (2007). This mechanism may operate through the synchronized dynamics of cardiac and electrodermal activity, modulated by the Central Autonomic Network (CAN) at the central nervous system level. If proved

valid, such a hypothesis could significantly advance intersubjective research, especially in clinical domains such as psychotherapist training and assessment. Despite inconclusive evidence, multiple authors have observed connections between interpersonal (IP) measures and empathy, especially in clinical settings. Neumann et al. (2015) highlighted the complexity of assessing empathy due to diverse and partially overlapping definitions, along with challenges posed by self-report measures influenced by social desirability biases. However, findings regarding IP suggest that objective, impartial, and ecologically valid approaches may allow for evaluating at least the most fundamental and affective aspects of empathy.

3.4 Latest models for biofeedback therapy: interpersonal biofeedback

The last section of this chapter is dedicated to introducing what has reasonably emerged from the previous literature outlined until now: even though the corpus of literature is limited, biofeedback techniques in therapy have recently seen some advancements and to maximize their potential, new methodologies need to be applied. Trying to overcome the limitations listed above, scholars have focused more and more on measuring the interpersonal variance of physiological variables during dyadic encounters. Clinical sessions are dedicated moments, feasible to measure changes, as change itself is the aim of psychotherapeutic journeys. The following sections will delve into the merits and drawbacks of interpersonal biofeedback models, exploring their potential as a means to integrate empathy and physiological metrics within the clinical setting, as suggested previously.

3.4.1. The Attachment-informed biofeedback model: Yossi Ehrenreich.

Yossi Ehrenreich brings attention to the fact that sharing one's own emotion goes through words and actions, as they happen to be the only available tools people can reach out to, and this is leading to a sort of isolation in the author's opinion. I am quoting an extract of Ehrenreich's work below, in which he describes how biofeedback can replace or ameliorate the sharing process:

“Graphic representation of physical sensations overcomes some of this isolation. Emotions are displayed without words or actions, without smiles or tears. They receive an external reflection, outside of the person's body. When the sensor is placed on a person's body, there is a sense of the metaphorical skin becoming just a little thinner” (Ehrenreich, 2018, p. 52).

Relying on this reflection, the author presents a new model of biofeedback called “Attachment-Informed Biofeedback”. In his model, biofeedback is utilized to reflect the body's functions and extend into the interpersonal realm, providing insight into the physical dimension. This facilitates the

moderation of adaptation and regulation processes, fostering both integration and individual distinctiveness. It is, indeed, part of an embodied extension/cognition. The presented model includes several stages: 1) “Hello, this is your body talking’ – Understanding the window into the body”, this is the phase in which a person acknowledges their own physiological oscillations, displayed on the screen while the therapy session begins; 2) “Hi! I’m here too. There’s more than one body here’ - Attending to the physiology of the partner/spouse/dyad”, applied to the clinical encounter, this is the moment in which the patient discovers the presence of someone else’s physiology, the clinician is connected to the computer too, although the person is still very focused on their own’s physiological recording. At this point, the parallel experiences must be shared verbally to expand the shared domain even further. Ehrenreich defines the empathy that develops between the two participants as beginning with similar physical sensations. In situations in which each part of the dyad sets off the other (e.g., arguing parents and children, couples in conflict), the physical familiarity that is mediated by the computer screen enables empathetic familiarity in the presence of the other. At the very least, it can ease the conditioning that controls us in the presence of a person we generally experience as a threat (Ehrenreich, 2018);

3) “Meeting of body images – Inviting dyadic acknowledgment through merging and distinctiveness exercises”: both visual depictions portraying the two individuals in the pair are displayed on a single screen, allowing both participants to view them simultaneously. This visual approach adds a tangible but non-physical aspect to patients' interpersonal interactions. Metaphorically, the points where the images intersect on the screen can be likened to subtle forms of physical contact; the merging of physical representations (rather than abstract ideas) holds significance in the development of a shared interpersonal space. At this stage, the therapeutic framework of interpersonal biofeedback provides an opportunity to explore two fundamental aspects—unity and distinctiveness. These terms resonate with early developmental stages, where infants initially perceive themselves as extensions of their caregivers before gradually establishing their own identities. The proposed model employs these concepts to distinguish between two types of exercises—those promoting mutual involvement (joint exercises) and those emphasizing individual differentiation (distinctive exercises) (ibidem).

While these conditions may appear to indicate two distinct psychological states, it's important to acknowledge that this therapeutic approach extends beyond such interpretations: Ehrenreich asserts that even individuals not inclined towards interpretative therapy can benefit from the interpersonal biofeedback method. In merging exercises involving various pairs such as parent-child, romantic partners, or therapist-patient, the objective is to achieve synchronization in physiological responses. Whether connected to a single sensor or separate ones, the screen exhibits a unified graph representing

their collective physiological condition. When both participants are linked to a single SCL sensor, maintaining continuous physical contact becomes imperative for proper sensor functionality. Beyond its technical necessity, this configuration carries significant therapeutic implications. Typically, participants engage in handholding, providing unconscious cues about each other's stress levels while simultaneously experiencing mutual effects. This dual feedback mechanism entails interpreting feedback from the computer screen graph, which signifies the shared physiological state, alongside direct feedback from the held hand.

For example, in mother-daughter dyadic therapy, observing each other's physiological responses offers a platform to address the daughter's reliance on her mother's calming presence. As previously discussed, distinctive exercises differ from merging exercises in terms of their guidelines and goals. These exercises highlight the importance of maintaining one's individual physiological patterns in the presence of the other while acknowledging the influence of the other's physiology on each member of the dyad. This sounds critical as it sustains the thesis that a me – other distinction is a nuclear part of the practice of clinical empathy and empathy in general, as outlined in Chapter 1 of this thesis work. It's a delicate task that demands significant time and attention. At this juncture, participants are aware of their reciprocal impact and must accommodate each other's physiological expressions. For instance, in a dyad involving two parents, one might be tasked with remaining calm while the other experiences agitation or distress.

4) “Changing the encounter – Generalizing skills to accommodate routine dyadic/spousal situations”. The model is thought to provide biofeedback therapy to dyads or more numerous groups of people, bonded with various kinds of relationship, including the clinical one. These exercises mark a pivotal transition to a stage where interpersonal dynamics undergo transformation. Skills such as mutual soothing, remaining relaxed in each other's presence, preserving individuality, fostering compatibility, and addressing the need for both closeness and differentiation become integrated into patients' everyday routines. They are encouraged to practice these exercises at home, making them a part of their daily lives. Therapy sessions often center on navigating challenges, but more frequently, they celebrate successes achieved through the application of diverse skills. At this juncture, considerable emphasis is placed on honing the capacity to attune to the other's state without relying on computer feedback, and on refining the ability to respond adaptively and deploy the most suitable skills in various situations.

The presented stages follow a linear path, and skilled clinicians can relate to these stages as phases, adopting relevant exercises and guidelines. The model offers a physiological window that can expand the therapeutic encounter and the interpersonal domain. This domain now also includes the physiological dimension, which provides a glimpse into the patient's emotional world: as discussed

by Hayakawa in 2022 and defined in paragraphs 1.3.3.1 and 1.3.3.2 of this thesis, clinicians should critically consider the suggestion of “glimpsing” into the patient emotional world when not expressly requested to by the patient narratives: most times, it is all about listening to their narrative and take into consideration all the elements clinicians cannot personally relate to, as they belong to the realm of the patient’s internal world. Ehrenreich suggests that having a physiological expansion facilitates more effective work with different types of dyads, including couples, parents, and parent–child pairs, in which each person discovers the partner in the dyad in a different light. Each dyad practices merging and distinctiveness exercises, while indirectly developing their mutual regulation ability. It is clear how the physiological window enriches dyadic psychological therapy: interpersonal biofeedback emphasizes the role of the patients’ interpersonal relationship in different life situations, but I argue that this could partially take away the patient’s influence on the contents they choose to divulge or not. For sure interpersonal biofeedback can enhance couple and dyadic therapy and reinforce the therapeutic effect, but at what cost? This is a new stage in the development of biofeedback therapy, in which it moves from individual behavioral therapy to a new therapeutic domain.

3.4.2 Dyadic biofeedback: Levit Binnun.

A second model of interpersonal biofeedback is the one that Nava Levit Binnun and colleagues propose drawing onto Neal Miller’s attempt in the Seventies: demonstrate the regulatory powers human beings might have on their autonomic system’s actions (heart rate etc.). Levit Binnun and colleagues present a model of what they call “dyadic feedback” (Levit Binnun et al., 2010). Miller’s work aimed at finding evidence that operant conditioning of autonomically mediated functions was possible; the requirement was to demonstrate that no alternative mechanism could explain the autonomic changes. Opponents stated that involuntary autonomic responses could be induced by various voluntarily controlled actions (for example, slowing heart rate through breathing exercises). Donald Moss (1998) summarizes Miller’s series of experiments as follows:

Miller’s research inspired the hope that biofeedback can enable a human being to take a more active role in recovering and maintaining health. Further, it encouraged the dream that human beings can aspire to previously unimagined levels of personal control over bodily states, reaching unprecedented states of wellness and self-control (Moss, 1998, p. 148–149).

If Miller did not include the clinician in the biofeedback treatment concept, according to the dyadic biofeedback model, the interaction’s emerging interpersonal space becomes the central element driving the therapeutic process (Binnun et al., 2010). While engaging with the physiological

screen necessitates consistent repetition, investigating the subjective experience demands extensive dialogue. This approach emphasizes the correlation between subjective elements (such as thoughts and images) and objective metrics (like physiological data) (ibidem). According to Levit Binnun and colleagues, the apparent movement of psychotherapy seems to be from one-person psychology toward two-person psychology, which highlights the importance of the interaction between two subjects and the potentially essential role of an interpersonal approach. The authors' framework is founded on a fundamental aspect of human behavior: interpersonal dynamics. It highlights the significance of interpersonal relationships, seeing interaction as the main mechanism for mutual regulation of physiological states. In this view, each person within a pair acts as a physiological regulator for the other.

Considering what has been said until now, it is evident that individuals in dyads are intertwined: they interact by responding to each other's behaviors and emotions. Levin Binnun and colleagues propose that individual psychological and physiological equilibrium is upheld and controlled within the relational context, particularly through the presence of the other individual. Therefore, mutual regulation emerges as an inherent aspect of the relationship. The impacts of these interactions are shaped by the dynamics of each dyadic participant and the interconnections between their past experiences and the present circumstances, as noted by S. Chow and colleagues (2010). The authors within Levit Binnun's group propose that this concept was introduced early in the evolution of biofeedback by Ed Taub. Taub observed that "perhaps the most influential factor in determining whether thermal biofeedback learning takes place is the nature of the interaction between the therapist or experimenter and the patient or participant, known as the 'person factor'" (Sedlacek & Taub, 1996, p. 550). Considering that Levit Binnun and colleagues draw onto these conceptualizations, it is interesting to note that the dyadic biofeedback model considers, in fact, the person factor, to say the element that people are involved in the encounter, and there might be variables that cannot be included or operationalized, even though it sounds convenient in terms of therapeutical outcomes to control them and therefore be able to forecast them.

In Levit Binnun and colleagues' approach to biofeedback, the interpersonal dynamic is viewed through various scenarios, two of which are outlined below: in the first scenario, the interpersonal context is established by acknowledging the presence of another individual (the therapist) in the room and understanding how this interaction influences the patient's capacity for self-regulation. In this setup, a single physiological screen, depicted in figure 3 (below), section on the left, displays the patient's physiological state. While the therapist-client relationship is acknowledged and leveraged in therapy, the primary focus remains on the individual and their ability to self-regulate.

Then, a second physiological screen is introduced: that of the therapist. Illustrated in figure 3, central section, this scenario externalizes and embodies the internal arousal states of both individuals in the dyad. This shift transitions the situation from a personal to a dyadic level. The interpersonal exchange expands beyond affecting only one person's self-regulation ability. It provides each partner with direct insight into how they can be regulated (or dysregulated) through the abundant resource of human interaction. Furthermore, each partner in the dyad can directly learn how to enhance the interpersonal dynamics and foster more regulatory interaction, benefiting both individuals involved. This innovative setup, where dual physiological screens facilitate mutual co-regulation through interpersonal exchange, is termed dyadic biofeedback (DBF).

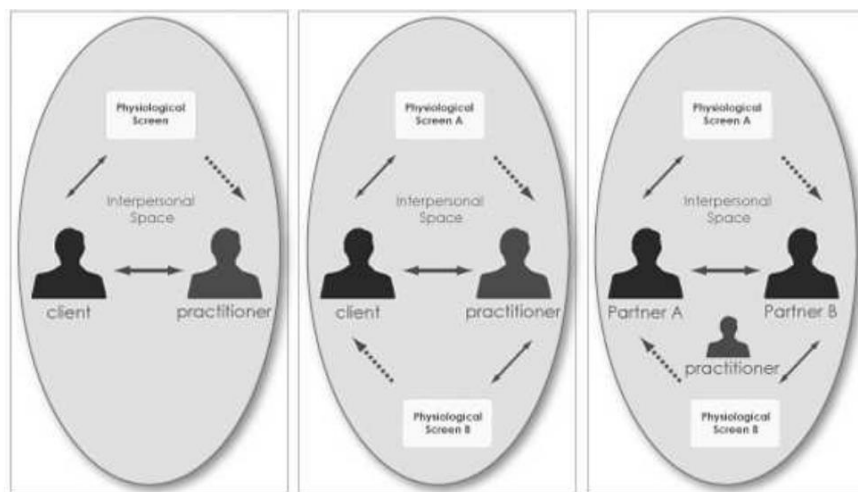


Figure 3: different biofeedback models using an interpersonal approach, by Binnun et al., 2010.

This model holds significant potential for interactions mediated by daily life, making it particularly suitable for contexts like couple therapy or family therapy. It builds upon the fundamental premise that achieving a state of homeostasis is essential for healing, transformation, and subsequent well-being. It proposes that there exists an optimal level of arousal conducive to maximal functioning and interaction. In essence, while Miller's model highlighted the capacity to self-regulate using one's own body, the DBF model emphasizes the utilization of interpersonal space and interactional patterns to facilitate states of co-regulation. My concern regards the potentially negative outcome of co-regulation in a dyadic context: this model is applied to therapeutical contexts as well, but this kind of interdependence between therapist and patient sounds far from the asymmetry which is necessary in a therapeutical context. To clarify, I do believe that a state of attunement is necessary in the clinical encounter, but co-regulation involves an equity in the roles that – as far as my knowledge gets – is not the case in patient-clinician relationships (see chapters 1 and 2).

3.4.3 Interpersonal Biofeedback in Psychotherapy

In the dyadic biofeedback model, it is evident how the concept of “self” evident in notions such as self-control and later in self-regulation, has held a pivotal position in biofeedback literature from its beginnings, as pointed out by Aron Rolnick and Yossi Ehrenreich (2018). Yet, in recent years, there has been a shift among researchers from a focus solely on individual psychology to a recognition of the dynamic between two individuals, known as two-person psychology, previously mentioned in section 3.1 of this thesis. This perspective underscores the profound impact of interpersonal dynamics and advocates for an approach that acknowledges the importance of interactions between people. Scientific investigations further support this shift, shedding light on how interpersonal interactions play a regulatory role (Rolnick & Ehrenreich, 2018). As Rolnick and Ehrenreich claim, biofeedback (BF) treatment is never done in solitude. There is always the presence of the “other”, meaning the therapist or clinician in general. Integrating neuroscience and therapy helps the patients to understand that their body and brain are influenced not only by drugs or automatic conditioning processes, but also by the impact of significant others (Rolnick e Ehrenreich, 2018, p. 2) Khazan (2013) combined biofeedback with mindfulness, and Rolnick, Oren, and Bassett (2016) further expanded this idea with their concept of sensor-enhanced therapy (SET), suggesting that biofeedback could be effectively integrated with third-generation cognitive behavioral therapy (CBT).

Rolnick and Ehrenreich claim that the triggers within the psychophysiological profile typically correspond to recognized stressful circumstances: therefore, by observing a patient's response to these triggers, we assess how their body reacts under stress. The trigger related to embarrassing questions stands out as the winning ace, in their conceptualization: it elicits a potent emotional response that allows the clinician to explore the influence of shame or embarrassment on the body and subsequent social interactions. That allows to explore different innovative forms of psychophysiological profiles that mirror patients' relational patterns. I argue that “a strong emotional reaction” is very far from what the just mentioned authors define as a winning ace: as far as it is precious to analyze, a narration in which shame and embarrassment are the leading emotion in supporting a good therapeutic outcome are far from representing a good and inclusive therapeutic practice.

In biofeedback-assisted psychotherapy, a comparison can be made. The fearful and anxious patient may feel vulnerable and reliant on the therapist, which could trigger emotions like shame, helplessness, and despair. This experience contrasts with the patient's past developmental encounters, while the biofeedback therapist remains composed and reassuring (Rolnick e Ehrenreich, 2018). Observing with the patient their physiological reaction, an opportunity is provided for the therapist

to validate this experience, label it, and explain emotional arousal. The therapist also offers the patient an explanation of the process that produces their arousal. Then the therapist teaches self-regulation, fulfilling a role that was absent in the original parenting, as argued by the authors. Therapy conducted with biofeedback calls for validation, empathy, and acquisition of self-regulation ability, but – I argue – the ways to reach these goal-skills make a difference.

3.4.4 Interpersonal biofeedback and psychodynamic psychotherapy

The final model presented in this chapter comes from a study conducted in 2020 by Kleinbub and colleagues. They noted a shift in psychodynamic perspectives on the therapeutic relationship; initially seen as something occurring within individuals, the therapeutic relationship evolved into a recognition of its occurrence between the patient and therapist. From their perspective, this shift was influenced by the emergence of general systems theory, which posits that all human relationships can be understood as mutual regulation between interacting subsystems (see Wiltshire et al., 2020). Differently, seeing relationships in terms of appropriate responsiveness or regulation adds a temporal dimension to the examination of clinical techniques (Kleinbub et al., 2020).

The authors draw upon both early and recent studies, supported by neuroscientific evidence, to assert that the brain organizes sensory-motor perceptions of the world into "embodied representations" through various mechanisms. These representations serve as heuristic prototypes, shaping new perceptions, and as the neuronal basis for internal objects, facilitating secondary cognition (*ibidem*). They emphasize the presence of embodied cognition in Freud's early work (1923), where he described the ego as a bodily ego, implying that the ego originates from bodily sensations. This embodied perspective has remained central to psychodynamic theory, particularly in its relational aspects such as empathy and attachment (Kleinbub et al., 2020).

Concerning embodied empathy, a pivotal aspect of this thesis as well, prominent scholars in the field like de Waal and Preston concluded that human beings grasp others' emotional states through personal, embodied representations, allowing empathy and accuracy to enhance based on one's own past experiences (De Waal & Preston, 2017; Kleinbub et al., 2020). Similarly, Rizzolatti and Caruana noted that "empathy is based on personal, embodied representations of emotions that are mediated by the mirror mechanism" (Rizzolatti & Caruana, 2017, p. 1). In essence, our physical and emotional experiences, such as joy, fear, feelings of nurture, hunger, etc., are "stored" in our brains, and these "stored experiences" are automatically and unconsciously reactivated when we perceive similar experiences in another person. Importantly, these reactivations engage not only isolated brain regions

but entire brain networks involved in processing somatosensory, emotional, and verbal experiences, as well as mnemonic and higher cognitive functions (De Waal & Preston, 2017; Kleinbub et al., 2020)

The authors elucidate that these representations extend beyond the central nervous system. Via the Central Autonomic Network (CAN), activations in brain regions such as the anterior cingulate, ventromedial prefrontal cortex, insular cortex, amygdala, and hypothalamus govern the autonomic nervous system, thereby overseeing bodily physiology holistically. The linking role of CAN implies the potential for investigating empathy's operation indirectly using psychophysiological methods (Ramachandra et al., 2009). Given that previous studies have primarily focused on assessing empathy via physiological metrics, physiological synchronization - linked to empathy - could be construed as indicative of central mirror activity, as proposed by Palmieri and colleagues (2018). This suggests the potential for assessing the interpersonal regulation of unconscious emotions on a moment-to-moment basis (Kleinbub et al., 2020).

As a demonstration of embodied cognition, the authors reference Arianna Palmieri's research (2018), which illustrates how manipulating attachment representations in therapists can alter their physiological synchronization with patients. This underscores that the attachment style acquired in youth is embodied, shaping not only intimate relationship formation but also intertwining with language. This aspect will be explored in the final chapter of the thesis, given the central focus on patients' narratives. Additionally, initial findings by Kleinbub et al. (2020) suggest a correlation between moment-to-moment physiological synchronization and specific verbal processes (*ibidem*).

In the framework proposed by Kleinbub's team, the signals would undergo processing to achieve two objectives: (1) evaluate the continuous level of physiological synchronization to identify periods of high and low attunement, and (2) extract notable features such as indicators of specific processes (e.g., secure-attachment communication or alliance ruptures), particular patient emotions (as reviewed by Shu et al., 2018), or sudden shifts in temporal dynamics (e.g., transitioning from a calm to an excited state). Subsequently, this information would be relayed back to the therapist's device and conveyed to them through haptic signals (Kleinbub et al., 2020, p. 4).

The aim of Kleinbub and colleagues' research is to provide the therapist with awareness on the unconscious and non-verbal fluctuations of the patient they encounter, or at least a part of it, through moment-by-moment interpersonal physiological measures. As explored in the studies presented in this chapter, these measures have been shown to measure “features of empathy, attachment, and alliance, information which could easily be provided in real-time to therapists, enriching their awareness of themselves and their patients” (Kleinbub et al., 2020, p. 3). Using this

tool, they would aim to help therapist of any experience level to reach the best possible live comprehension of the patient's unconscious world.

Finally, I would like to stress how embodiment of emotions is central in all the models presented in Chapter 3; therefore, following the same logic behind embodied cognition, I argue that further exploration of the influence of a device on patients and therapists is necessary, to assess for any perceptual interference that might be provided by the use of an external device connected to one's body. I support Kleinub et al.'s concern for the decline suffered by psychoanalytic and psychodynamic therapies within the last years, with the rise of evidence based-treatments. The latter, at the moment, have an extra gear over the ones that are challenging to operationalize, such as psychodynamic and psychoanalytic ones. Nevertheless, I advocate for a critical discussion when introducing new instruments within the patient-clinician dyads, mostly if aimed at measuring core concepts such as empathy and adult attachment. Kleinub et al. suggest that interpersonal biofeedback could be a powerful tool in psychodynamic therapies, as it could represent a "new sense" to therapists of any level of expertise (Kleinub et al., 2020). This proposal, its potentialities and consequences, will be further discussed in the last chapter of this thesis, together with the other interpersonal biofeedback model.

DISCUSSION AND CONCLUSION

In synthesis, this thesis explored how physiology and empathy are linked and the potential critical sides of this bond, through the lens of epistemic injustice. The main results I want to highlight are going to be listed in this discussion section. What emerges from the discussion on epistemic injustice in Chapter 1 are a number of take-away messages on how to manage empathizing while avoiding objectification and epistemic injustice toward patients. To begin with, the concept of “speaking speech” or “authentic speech”, defined by Spencer and Broome (2023), refers to spontaneous and creative first-hand meaning-making: this approach, involving “virtuous listening”, transforms the understanding of psychiatric illness by recognizing patients as speaking subjects who engage in original speech acts. It challenges traditional empathic understanding, which can lead to epistemic objectification, and instead promotes a methodology in phenomenological psychopathology that addresses ethical and epistemic concerns. Integrating Fricker’s virtuous listening with Merleau-Ponty’s phenomenology, Spencer and Broome propose a model that restores the epistemic agency of psychiatric patients.

Secondly, regarding simulation – deeply involved in empathic understanding – I refer Mackenzie and Sorial’s focus on the challenges of simulation in situations involving differences of embodiment, gender, racial or ethnic identity, culture, and so on. They believe these constraints are not necessarily insuperable (Mackenzie e Sorial, 2022). I trust this concept to need further elucidation, perhaps within the field of intercultural psychology and ethnopsychology, which could promote tools to deal with these differences that arise not only disparity based on epistemic power – as in the definition of epistemic injustice by Miranda Friker (2007) reported in section 1.3 – but also based on embodied features and differences within the parts. For instance, as noted by Patel & Hall (2021), even though the biological and somatic responses are more cross-culturally universal, the behavioral and affective responses are more likely to be culturally mediated, meaning that – following this thesis’ scope – what empathy is for one culture might not find a match in another.

Moreover, Coplan (2011) describes “pseudo-empathy” (see section 1.3.3.2) wherein individuals mistakenly believe that imagining another’s perspective grants them access to that perspective. This form of perspective-taking can be overcome through genuine empathy, an intricate imaginative process where an observer simulates another person’s mental state while maintaining a distinction between themselves and the other: this requires emotional matching, other orientation, and self-other differentiation. Achieving genuine empathy is challenging, as pointed out in section 1.3.3.2.

Another interesting point of view is the one of “empathy gap”, proposed by Mary Scudder, analyzed by Mackenzie and Sorial (2022). The peculiarity here is that they point out how providing “empathetic narratives” places significant demands on speakers (therapists). This could turn out being challenging for all the reasons listed in section 1.3.3.2.

Regarding the so-called epistemic credibility, Kidd and Carel (2017) argue that judgments about the epistemic credibility of ill persons are often prejudiced and maintained by negative stereotypes and structural aspects of healthcare (see section 1.3.3.). This bias is particularly evident in the treatment of chronically ill patients: negative stereotypes often depict illness as a moral, social, or epistemic failure. Drawing onto Fricker’s definition of epistemic injustice, Kidd and Carel link epistemic injustice to broader social injustice, noting that healthcare's focus on biomedical approaches neglects the subjective experiences of illness (Fricker, 2007; Kidd and Carel, 2017). This neglect leads to a loss of epistemic confidence in ill individuals, with testimonial injustice arising when stereotypes undermine their credibility. As a result, patients' testimonies are valued for factual information but are excluded from decision-making processes, reinforcing their objectification in medical settings, resulting in patients’ complaints about their healthcare experience. To achieve epistemic justice in healthcare systems, it is necessary to revise these assumptions and adopt a pluralistic approach that values patients' informational contributions.

One topic of section 1.3.3 was hermeneutical injustice: it arises when individuals lack the knowledge or means to access information, leading to a lack of social recognition and epistemic respect. In ill individuals, this can lead to social and personal costs, as non-dominant interpretive resources are often ignored by healthcare professionals, making it difficult to communicate the illness experience due to inarticulacy and ineffability (defined in the abovementioned section). Hayakawa (2022) argues that patients' experiences of their disease are often dismissed, especially when their narratives are chaotic and lack order, which are often considered anti-narratives. This view opposes the idea that the body’s narrative is essential, as in biofeedback therapies. Psychotherapeutic methods may be necessary when patients cannot verbalize their pain, but biofeedback techniques may not be applicable if the patient's sense of relevance is deemed insufficient.

A further criticism resides in modern society's focus on productivity and capitalism: these values lead to the perception that personal stories should emphasize restitution rather than genuine listening and validation. This bias marginalizes chaotic narratives in favor of those focused on recovery. Empathy trends favor similarity, causing privileged individuals to empathize more with hopeful patients rather than those in chaotic suffering. To address this, the concept of empathy needs

to be reframed and deepened to reduce social injustices, including epistemically wrongful oppression. There is of course a chance that the shared component of physiology in therapy discussed in chapters 2 and 3 could mediate the disparity between patient and therapist through the use of common screen in biofeedback mediated therapies: this would anyhow result in a reversal of the traditional roles of clinician and therapist in which the supposed “authority” is in the role of the clinician. It is the therapist that usually explores the patient’s states of mind; therefore, the patient’s duty is express themselves. This is why – I argue – the “humanizing role of empathic understanding” (Hayakawa, 2022, p.128), is not respected: there is a glance into the life and the physiology of the patient, leading to epistemic injustice and objectification. I believe it is important to recognize that people considered as holding “less epistemic reliability” (i.e., psychotic patients that tend not to be able to express their experience verbally and are more prone to chaotic narratives) are the most objectified because they are used as a source of knowledge, no matter what the cost for these abovementioned patients is. I believe that in cases of psychotic patients the use of physiological measures should be limited to the extent of measuring a dissonance between what they report and what their body reacts like, since there is a well-known fragmentation in these patients’ reality exam. This, anyhow, should not be confuse with an inspection and a doubt on their narrative. For all the reasons listed in section 1.3 (and sub-sections), prejudices in testing their narratives within the clinical practice would lead to marginalization and social injustice.

To fight epistemic injustice at both small and large-scale levels, Hayakawa advocates for an epistemically responsible empathy: mature empathy requires the elements of epistemic humility and epistemic dependence to be incorporated: this could be extended to responsible empathy for chaotic suffering. The author claims a direct connection between epistemic humility and two forms of epistemic dependence. According to section 1.3.3.1, epistemic humility may typically require us to display the following dispositions, here repeated for a matter of clearness: 1) to show understanding for the sufferer’s ongoing feeling of isolation; 2) to realize the big gap in experience between most of us and them and stop assuming we can easily grasp their intense experiences of illness; 3) to trust the sufferers themselves to help us understand their difficult situation; 4) to admit our own vulnerability and defensiveness instead of ignoring them, which might make us doubt or downplay the sufferer’s description of their chaotic suffering; 5) to admit that we can’t fully respond to their story on our own; 6) to work together with others who can listen and support us in understanding the chaotic story, sharing the responsibility of understanding.

According to Hayakawa, humans are vulnerable and sometimes must rely on both chaotic patients and supportive individuals who provide a safe environment. This support helps us be less defensive and more open to understanding chaotic testimony, which is crucial for empathic

understanding. Without recognizing the tension between openness and defensiveness, we risk becoming overly optimistic. Therefore, epistemic dependence and humility require collaborative epistemic practices that go beyond individual efforts. Drawing on Iris Marion Young and Martha Nussbaum, Hayakawa highlights the difference between interactive (direct interpersonal) and structural (social process) perspectives. The latter shows how individual actions contribute to systemic injustice. Following this, the widespread adherence to restitution-oriented understanding perpetuates structural injustice, as people collectively participate in processes that produce it.

The two structural remedies proposed by Hayakawa are: 1) epistemic injustice is directly inflicted on chaotic sufferers, therefore we should push the empathizer to respect the testimony as such, responding better to the underlying message which can be the most fundamental epistemic existential need; 2) the epistemic injustice is faced by listeners of chaotic narratives as well, emphasizing the disproportionate burden of caring responsibilities, including epistemic ones. Similarly to section 1.3.3.2, the vulnerability of those who hear chaotic testimonies is highlighted and a system that prioritizes the well-being of caregivers and avoids overburdening already precarious individuals is recommended. In this case, differently than in the just cited section, the overburdened listeners are patients' families, women in patriarchal societies, and caregivers experiencing burnout. I agree with Hayakawa in claiming for a power-sensitive and liberating care system, aiming to transform the current exclusive epistemic community into a more inclusive one that combines epistemic and empathic values. This shift would relieve individuals burdened with excessive epistemic responsibility while encouraging others, particularly men in many societies, to listen empathically to both patients' and caregivers' testimonies. Such reforms would distribute epistemic and empathic practices more equitably, alleviating emotional stress for caregivers and improving responses to chaotic storytellers' needs. Addressing the epistemic injustice suffered by listeners also enhances support for those sharing chaotic stories, highlighting the importance of structural remedies that cater to both groups' epistemic needs.

Nevertheless, Barrett Emerick claims that the nastiest form of civilized oppression is testimonial injustice, stating that the danger coming from civilized oppression lies precisely in its being civilized (Emerick, 2016). Therefore, even though they act with good meanings, people often fail to realize their role in committing oppression as accomplices. The author suggests that everyone suffers from system justification bias differently, based on their social position. He proposes two methods to reach an awareness of one's own complicity as an oppressor: the first is education aimed at acquiring propositional knowledge and the second is adopting the attitude of empathetic understanding, as described by J. Harvey (2007) as a practical, active action. Emerick claims

dialogical imaginative capacity when we try to give meaning to the experiences others are describing to us. Following Linda Alcoff's proposition, it's advocated that we engage in dialogue with others rather than speaking on their behalf (Alcoff, 1992). Additionally, it is essential to recognize that one of the key reasons for advocating this approach is to enrich our ability to empathize with others, thereby mitigating the risk of perpetrating testimonial injustice and civilized oppression (Emerick, 2016).

To demonstrate the benefit of testimonial justice, Miranda Fricker (2007) proposes two methods: 1) "plain personal familiarity", where prejudice is dismantled through habituation over time, as prejudicial features become forgotten or irrelevant. 2) Achieving the "ideal of full possession of the virtue of testimonial justice", where individuals regularly refine their credibility judgments until their "testimonial sensibility" automatically corrects credibility judgments without conscious effort (Fricker, 2007; Emerick, 2016). Emerick (2016) argues that overcoming complicity in injustice requires actively considering what it feels like to be on the receiving end of unjust treatment. The key question for the hearer should be "What's going on for her?" instead of "What's going on for me?" Empathy involves dialogical imaginative perspective-taking, where oppressed groups help privileged groups understand their experiences. However, this can be problematic for three reasons: (1) it imposes additional work on oppressed groups, (2) it can be emotionally taxing for them to recount their experiences, and (3) they may often be in unsafe positions to educate privileged groups (Emerick, 2016).

In the second chapter, the focus moved to biofeedback and interpersonal physiology research and how they can improve empathic encounters discussed in Chapter 1 by matching bodily mechanisms with emotional reactions and vice versa, as in embodied cognition theory (see section 2.4.1). Schoenberg and Davis (2014) note that some disorders, such as personality disorders, exhibit limited physiological responsivity and low capacity to recognize internal states. In the authors opinion, despite appearing incompatible with biofeedback, these characteristics may actually enable biofeedback to open new "introspective mind-body channels", potentially enhancing patient-clinician relationships and personal insights. Another condition, identified by Jaspers (1968) and explained in section 1.3.1, is what he defines as "un-understandable": primary delusions in schizophrenia, described as "a transformation in our very awareness of reality" (Jaspers et al., 1997, p. 95). Proving these affirmations right or wrong falls out the purpose of this thesis, but further investigation could be targeted at understanding what is the limit between the psychotic patient distorted reality exam and the clinician's prejudice or assumption, that leads to disbelief and epistemic injustice, attributing patients low epistemic credibility.

In the 1980s, Sarnoff highlighted the usefulness of biofeedback techniques for screening, assessment, and monitoring in psychotherapy, especially regarding Galvanic Skin Response (GSR) as a biofeedback that can help counselors better understand and empathize with clients' behaviors (Sarnoff, 1982). Additionally, Kouzak and colleagues (2020) recently advocated for using biofeedback as a complementary tool in psychotherapy to enhance patients' self-esteem, agency, and provide live feedback on their progress (see section 2.2). However, they emphasize the need for further research on diverse populations to fully test its clinical efficacy (Lehrer, 2017), which is one of the current concerns of the literature on the connection between empathy and biofeedback, as explored in Chapters 2 and 3.

For instance, in their review – reported in section 2.3.1 - Palumbo and colleagues (2016) suggest that the Autonomous Nervous System's reflection of shared experiences indicates that Physiological Synchronization (PS) might be an objective measure of internal processes linked to empathic interactions. They reached the following conclusions: research findings on the association between PS and empathy are varied, with some results showing these constructs as independent. Moreover, it is unclear whether PS correlates specifically with emotional empathy or another construct. Therefore, future research is needed to determine if a subtype of PS is specific to empathy. PS establishment among individuals doesn't seem to depend on shared circumstances, sensory modes of communication, or psychosocial factors like the type of relationship. Additionally, PS appears to predict various other variables, and its significance varies with context. Research has shown that clients report feeling more understood when PS is higher, suggesting a reportable component to PS. However, it's not clear whether individuals can recognize and report PS occurrences: studies indicate that higher PS correlates with reports of greater empathy, but there is no direct investigation into whether deliberate increases in PS would enhance affective empathy or interpersonal understanding. This question remains open for future research: perhaps, without a questionnaire to test specific components of empathy, it turns out impossible to measure such variables.

From the studies by Coutinho (2014) and Kleinbub (2017), emerges that dynamics and clinical significance of Interpersonal Physiology (IP) remain largely unexplored, though there are indications that it could be linked to a rudimentary form of affective empathy, such as emotional contagion. I agree with Palumbo et al. (2016) in their suggestion that psychophysiological synchronization likely provides informative insights into the state of a relationship. Although Kleinbub (2017) found that most studies report a positive association between psychophysiological synchronization and empathy, the researches do not adhere to a specific model, element that been proven to be extremely important, as analyzed in Chapter 1. Nevertheless, Kleinbub's intuition is noteworthy: studies to date, though

limited and in their early stages, have the potential to develop a tool that identifies subtle, moment-to-moment adjustments between a patient and their therapist. Such a tool would represent a significant paradigm shift in clinical process research, offering a new range of objective and often automated assessments, as discussed in Chapter 3, section 3.4 (and sub-sections).

In the patient-physician relationship, sociophysiology defines empathy as involving both the perception of attuned interpersonal neurobiology and the ongoing process of achieving this harmony, where reciprocal responses lead to greater synchronicity. Minor adjustments by either the patient or physician can cause significant neurobiological changes, highlighting the therapeutic power of clinical empathy. This is defined as the physician's use of empathic processes to directly affect the patient's psychobiology. Empathic clinicians can use relational processes to influence biological treatment outcomes, such as infant-caregiver attunements (see section 2.4.2). As D. A. Matthews and colleagues describe, “connexional moments” in medical encounters epitomize effective empathy, defined as experiencing a beneficial harmony within a biopsychosocial relational dynamic (Matthews et al., 1993).

What I would like to highlight here is Adler's (2007) statement that while biopsychosocial responsiveness between patients and physicians is mutual, it is not symmetrical. I claim that clinicians have the responsibility to address both biological and psychological aspects of a patient's disease, potentially leading to asymmetry that can cause epistemic injustices. Understanding the physiological properties of dyadic interactions could be crucial for future research on clinical empathy, particularly whether empathy underlies interpersonal synchronization or vice versa, since the research has not reached to an agreement yet.

To narrow down the information on the relationship between physiological measurements and empathy in the context of psychotherapy, Chapter 3 analyzed recent research on clinical empathy and synchronization and finally interpersonal biofeedback models. As explored in section 3.1, Marci and Orr (2006) suggest that psychophysiology, as an index of empathic connection, has several advantages over current approaches, given its biological basis and freedom from the self-report and observer bias that affect most empathy research tools. While observer bias can indeed be an issue for therapists – such as the similarity bias discussed in Chapter 1 – self-reporting by patients, as previously argued in the thesis, can serve as an active measure of empathic bonding: self-reports offer a spontaneous tool for patients to offer a narrative of their experiences, providing clinicians with a look into the patients' mental states and psychological structures. As pointed out in section 3.1, I am concerned regarding the prioritization of physiological and psychological measures: in order not to incur in epistemic injustice, priority shall be given to the patient narrative to permit an assessment on the patient's mental structure. Only after this passage, physiological measures should be applied to

have an insight on the possible dissonance between patient's report and their embodied perceptions of the reality. Examples can be found in Jasper's (1968) and Kouzak's (2020) works, in section 1.3.1.

One of the main reasons to research on empathy is that a lack of perceived empathy is a reliable predictor of unfavorable outcomes in psychotherapy: therefore, Marci and colleagues have argued that therapists and patients could benefit from research aimed at better understanding and enhancing engagement with this crucial psychosocial construct. However, I argue against this incomplete vision through an analysis of Vittorio Gallese's works: while Marci and colleagues propose simplifying the measurement of physiological substrates of empathy, they acknowledge that any algorithm for skin conductance (SC) concordance is an approximation of the complex intrapersonal and interpersonal dynamics involved (Marci et al., 2007, p. 109). I contend that oversimplifying these measurements could be risky and I would emphasize the need for further exploration of mirror mechanisms and shared mental representation, to reach an understanding of whether the latter can be measured through biofeedback measures at current use.

Gallese's analysis distinguishes dyadic relations by the epistemic stance of the individual ("I") suggesting a "second-person approach", similarly to Marci and colleagues, addressing the problem of other minds by reducing the mental gap between patient and therapist during clinical encounters (Gallese, 2013), as analyzed in section 3.1.1. In a dynamic system with reversible rules, the observer and observed are intricately connected. Through intentional attunement, "the other" transcends mere representation, becoming akin to our own bodily self. However, the belief in fully embodying another's physical experience is flawed and can lead to epistemic injustice, as discussed earlier and in Chapter 1, because it assumes full understanding of someone else's emotions – statement that was not proven possible as pointed out in Chapter 1 - and diminishes the individual's role in shaping their own life narrative.

Physiological coordination has been predominantly associated with measures of empathy and emotion, as demonstrated in studies by Marci et al. (2007), Marci and Orr (2006), and Messina et al. (2013). However, direct links between physiological coordination and psychotherapy outcomes have not been established. The reviews by Palumbo et al. (2016) and Kleinbub (2017) reported in chapter 2 highlight that the domain of interpersonal coordination, extending beyond psychotherapy, is fraught with terminological and conceptual challenges, which intersect with statistical and measurement issues, making it difficult to compare findings across studies.

Nevertheless, Irene Messina and colleagues have found that electrodermal activity (EDA) is effective in empathy research. Higher empathy scores correlate with increased EDA responses when individuals tend to crying infants or observe emotional scenarios (Balconi & Bortolotti, 2012; Messina et al., 2013). Clinical interviewers also show higher EDA responses when being empathic

compared to being distanced, and certain EDA amplitudes predict altruistic behaviors associated with empathy (Hein, Lamm, Brodbeck, & Singer, 2011). Gallese et al. (2007) support the idea that observing someone's emotions triggers an automatic “embodied simulation” of those emotions in the observer's brain. Messina and colleagues note that while physiological responses indicate a component of empathy, physiological concordance and empathy are not identical. Individual differences in physiological responses are important for understanding emotional and behavioral reactions. The study by Messina et al. supports a mirroring mechanism between EDA synchronization and empathy perception but calls for further exploration of the mediators and directions of this interaction.

Kleinbub and colleagues (2019) suggest that the interpersonal (IP) approach improves empathy measurement by offering: (a) an implicit, unbiased assessment method; (b) a data-driven methodology that unifies theories; and (c) the ability to collect data and measure automatically in natural settings, aiding clinical practice. Despite its potential, there is no standardized IP assessment method, and my suggestion is that therapists should consider and analyze both implicit and non-verbal behaviors, along with personal narrative characteristics, as essential elements of patient interaction, just as they do with explicit elements, in agreement with Messina (2013) and Wynn (2006) (see sections 3.2.1 and 1.2.2). Claiming for an “unbiased” assessment method is far from being evidence-based, as bias of similarity is always present when clinical encounters take place, as presented in sections 1.2.2, 1.3.3.1 and 3.1.

Kleinbub’s study hypothesized that Principal Component Analysis (PCA) could differentiate between the individual and shared physiological activities of patients and therapists during 16 sessions of psychodynamic psychotherapy. The results supported this hypothesis, with PCA identifying a shared patient-therapist component (PC1) that explained 34.4% of the variance, and two distinct components (PC2 and PC3) that loaded either on therapist or patient signals. The explained variance of PC1 was interpreted as a direct measure of interpersonal (IP) interaction. The study’s limitations include its exploratory nature and restriction to a single case, limiting generalizability. Additionally, no other measures of empathy were collected, preventing the assessment of convergent validity. Future research should replicate the study with a broader range of dyads and employ various instruments to validate the approach in clinical settings. The findings suggest that shared psychophysiological activation could be a candidate for a “somatic mirror mechanism”, potentially operating through synchronized cardiac and electrodermal activity dynamics modulated by the Central Autonomic Network (CAN). If validated, this hypothesis could significantly enhance intersubjective research, particularly in psychotherapist training and assessment (see section 3.3).

Despite inconclusive evidence, various authors have noted connections between IP measures and empathy, especially in clinical contexts. Assessing empathy remains complex due to diverse definitions and the challenges of self-report measures influenced by social desirability biases. Nevertheless, IP findings suggest that objective, impartial, and ecologically valid approaches might evaluate fundamental and affective aspects of empathy. For example, in mother-daughter dyadic therapy, observing each other's physiological responses offers a platform to address the daughter's reliance on her mother's calming presence. As previously discussed, distinctive exercises differ from merging exercises in terms of their guidelines and goals. These exercises highlight the importance of maintaining one's individual physiological patterns in the presence of the other while acknowledging the influence of the other's physiology on each member of the dyad. This sounds critical as it sustains the thesis that a me–other distinction is a nuclear part of the practice of clinical empathy and empathy in general, as outlined in Chapter 1 of this thesis work. It is a delicate task that demands significant time and attention. At this juncture, participants are aware of their reciprocal impact and must accommodate each other's physiological expressions. For instance, in a dyad involving two parents, one might be tasked with remaining calm while the other experiences agitation or distress.

In section 3.4.1 I described The Attachment-informed biofeedback model by Ehrenreich et al. (2018). In the phase number 4 of their model, considerable emphasis is placed on refining the capacity to attune to the other's state without relying on computer feedback, and on improving the ability to respond adaptively and deploy the most suitable skills in various situations. The stages presented in their model follow a linear path, and skilled clinicians can relate to these stages as phases, adopting relevant exercises and guidelines. The model offers a physiological window that can expand the therapeutic encounter and the interpersonal domain. This domain now also includes the physiological dimension, which provides a glimpse into the patient's emotional world: as discussed by Hayakawa in 2022 and defined in paragraphs 1.3.3.1 and 1.3.3.2, clinicians should be cautious in “glimpsing” into the patient emotional world when not expressly requested by the patient narratives. Most times, it is all about listening to their narrative and take into consideration all the elements that clinicians cannot personally relate to, as they belong to the realm of the patient's internal world. Ehrenreich suggests that having a physiological expansion facilitates more effective work with different types of dyads, including couples, parents, and parent–child pairs, in which each person discovers the partner in the dyad in a different light. Each dyad practices merging and distinctiveness exercises, while indirectly developing their mutual regulation ability. It is clear how the physiological window enriches dyadic psychological therapy: interpersonal biofeedback emphasizes the role of the patients' interpersonal relationship in different life situations, but I argue that this could partially take away the patient's influence on the contents they choose to disclose or not. For sure interpersonal biofeedback

can enhance couple and dyadic therapy and reinforce the therapeutic effect, but at what cost? This is a new stage in the development of biofeedback therapy, in which we move from individual behavioral therapy to a new therapeutic domain.

Another model of interpersonal biofeedback is the dyadic biofeedback model by Nava Levit Binnun et al. (2010) exposed in section 3.4.2, that holds significant potential for interactions mediated by daily life, making it particularly suitable for contexts like couple therapy or family therapy. In essence, the DBF model emphasizes the use of interpersonal space and interactional patterns to facilitate states of co-regulation. My concern regards the potentially negative outcome of co-regulation in a dyadic context: this model is applied to therapeutical contexts as well, but this kind of interdependence between therapist and patient sounds – in my opinion – far from the asymmetry that is necessary in a therapeutical context. To clarify, I do believe that a state of attunement is necessary in the clinical encounter, but co-regulation involves equity in the roles that – to the best of my knowledge – is not yet the case in patient-clinician relationships.

As reported in section 3.4.3, Rolnick and Ehrenreich (2018) argue that – in a therapeutic context – the triggers in a psychophysiological profile often align with known stressful situations. By observing a patient's response to these triggers, clinicians can assess how their body reacts under stress. Among these triggers, embarrassing questions are particularly significant; they provoke strong emotional responses, allowing clinicians to explore how shame or embarrassment affects the body and social interactions. This approach enables the examination of psychophysiological profiles that reflect patients' relational patterns. However, I contend that relying heavily on “a strong emotional reaction” to shame and embarrassment as a therapeutic tool can result lead to problematic outcomes in ethical terms: while it is valuable to analyze any of these emotions, emphasizing them as key to therapeutic success might probably not foster a good and inclusive therapeutic practice. Nevertheless, I agree with Rolnick and Ehrenreich that, in biofeedback-assisted psychotherapy, a fearful and anxious patient may feel vulnerable and reliant on the therapist, which could trigger emotions like shame, helplessness, and despair (Rolnick e Ehrenreich, 2018). Observing with the patient their physiological reaction, an opportunity is provided for the therapist to validate this experience, label it, and explain emotional arousal. The therapist also offers the patient an explanation of the process that produces their arousal. Then the therapist teaches self-regulation, fulfilling a role that was absent in the original parenting, as argued by the authors. Therapy conducted with biofeedback calls for validation, empathy, and acquisition of self-regulation ability, but – I argue – the ways to reach these goal-skills – may make the difference, as argued in the previous paragraph.

The last interpersonal biofeedback model presented in Chapter 3 is the one applied to psychodynamic psychotherapy by Kleinbub et al. (2020). In contrast with the tendency of seeing interpersonal interactions as sub-systems interacting (for an example see Wiltshire et al., 2020, section 3.2), in this model the relationship is seen in terms of appropriate responsiveness, adding a temporal dimension to the examination of clinical techniques, precious in the development of this proposal of interpersonal biofeedback. Given that previous studies have primarily focused on assessing empathy via physiological metrics, physiological synchronization – linked to empathy – could be construed as indicative of central mirror activity, as proposed by Palmieri and colleagues (2018). This suggests the potential for assessing the interpersonal regulation of unconscious emotions on a moment-to-moment basis (Kleinbub et al., 2020).

Referring to the last section of Chapter 3, I argue that further exploration of the influence of a wearable device on patients and therapists is necessary, to assess for any perceptual interference that might be provided by the use of an external device connected to one's body (see section 3.4.4). As already stated, I support Kleinbub and colleagues' concern for the decline suffered by psychoanalytic and psychodynamic therapies within the last years; nevertheless, I advocate for a critical discussion when introducing new instruments within the patient-clinician dyads, mostly if aimed at measuring core concepts such as empathy and adult attachment. Kleinbub et al. suggest that interpersonal biofeedback could be a powerful tool in psychodynamic therapies, as it could represent a "new sense" to therapists of any level of expertise (Kleinbub et al., 2020). In agreement with Jaspers (1968), Fricker (2007), Halpern (2013), Emerick (2016) and many others, I argue that the level of expertise is a relevant variable of the experience of empathy: therefore, it cannot be relegated to the external add-on of a wearable device. I would suggest further exploration regarding how habituation and experience could enhance empathic attunement in clinical practice through the use of devices as the one proposed by Kleinbub's team.

Lastly, some conclusive thoughts: this thesis reinforces critical issues already raised by eminent scholars in the last twenty years through their research on epistemic injustice, by linking epistemic concerns to last-generation techniques of physiological measuring. I aimed at finding a new way to look at these techniques: that's why I have suggested a pluralistic way of considering patients' epistemic status, the closest to an epistemically just way of seeing them, in agreement with the abovementioned researchers on epistemic injustice. The need for a responsible and more humanizing empathy emerges from the patients' complaints in healthcare, asking for an empathy that cannot be free of similarity bias but that – at the same time – will not tend to marginalize and gaslight patients'

sufferance, as epistemic injustice in clinical context can spread to people's whole lives, promoting social injustice.

I have argued that measuring interpersonal synchronization between the patient and the clinician could either diminish the use of biases or enhance it, as to say that sharing something (the physiological representations on a screen, little dermal shocks from some devices, etc.) could almost cancel the asymmetry between the patient and the therapist. If the latter holds true, then we should re-think the patient-therapist relationship in terms of symmetry. What we could reconsider as well, in relation to embodied cognition, is the influence that an external device – referring specifically to the interpersonal biofeedback models – could have on the person and therefore on the relationship. Further research could specifically identify how patients and therapist perceive the device in a more ecological context, perhaps measuring specifically their feelings toward the device, both from the patient and the clinical point of view.

The thesis is not without limitations: first, the methods used for the literature research were not standardized, and multiple humanistic disciplines have been contributing to the research; even though this could potentially add richness to my research work, I think some research on the ethical implications of using interpersonal biofeedback with specific populations is required (i.e., psychotic patients, patients with personality disorders, with disabilities). I would especially underline the necessity of exploring the influence cultural differences might have in the context of biofeedback between patient and therapist. To my knowledge, this is the first dissertation connecting the topics of epistemic injustice to empathy and biofeedback techniques in the therapeutic environment, therefore the flaws of this research – as already pointed out – could imply getting lost in the diverse terms used to describe both empathy and interpersonal synchronization issues and techniques, hence we should beware that. Nevertheless, I believe that a more inclusive therapeutic practice could benefit from the first statements emerging from thesis. Even though they are embryonal and for now qualitative, the critics I have sustained aim at supporting practitioners when assessing the context in which they apply interpersonal biofeedback techniques, including both research and ecological contexts.

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