

# LINKING MECHANISMS

## *Emotional Contagion, Empathy, and Imagery*

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Deconstructing the emotional relationship between patient and therapist is certainly a formidable task. Using research results from experimental social psychology, psychophysiology, and developmental psychology, this essay focuses on the automatic processes of mimicry, emotional synchrony, and physiological synchrony—all preludes to empathy. For the therapist to achieve an empathic posture, however, she must also *imagine* the perspective of the patient. Furthermore, to broaden and sharpen her empathic lens, she must tune in to the ubiquitous current of nonverbal communication that is part and parcel of the interactive treatment process. For these reasons, imagery proves to be a crucial element in the transition from simple attunement to empathy. A clinical vignette and a neuroscience perspective on image formation help illustrate the relationship between emotional contagion and imagery. It is suggested that there is a reciprocal relationship between the emotional ambience cocreated by the two participants and image formation. Sensorial images aid in the detection of gross emotional states as well as in the nuancing of their intensity. Affective ambience, on the other hand, seems to affect the selection of one particular image versus another.

*Keywords:* emotional contagion, empathy, imagery

“I grew aware of stinking, putrefying smells in the room (there were none). I shared this rather bizarre experience with her. She was not surprised. She had held her putrefied self in check until then . . .” The patient proceeded to explain the therapist’s olfactory images, describing how, when she was a child, her father had obsessed about his bowel movements and left their remains (e.g., dirty toilet paper and enema bags) in the bathroom along with tissues containing sputum in the living room. She felt dirtied, shamed, and humiliated by them and somewhat responsible. The smells became an integral part of her and were now alive and becoming part of the therapist’s current experience (Weber, 2003).

Examples of nonverbal communication such as the one above are not uncommon in the literature (see, e.g., Levenkron, 2006, pp. 173–174; Safran, 1999, p. 9; Ogden, 1994a, pp. 5–6; Arizmendi, 2008). In this particular case, the therapist’s olfactory image equates

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to a medium of communication between her and the patient whereby the latter's nonsymbolic experience of shame and humiliation is "made known" to the therapist—initially in a vague, ineffable manner. But how does all this happen? What links the patient's and therapist's experience in such a way that information is transmitted in a fashion that extends beyond the realm of the verbal? In what follows, I will explore this communication process from the perspective of the relationship between three of its major ingredients: emotional contagion, empathy, and imagery.

### Emotional Contagion

Since at least the mid 20th century, emotional experience has been thought to be the essential core of the therapeutic relationship or, for that matter, of any human relationship. Bion (1962) emphasized this by stating that "An emotional experience cannot be conceived of in isolation from a relationship" (p. 42) and described the basic emotional links between two people as love, hate, and knowledge. These three, along with their negative equivalents, constituted the primary links that could account for any transaction. The linking processes ranged from primitive forms such as projective identification to more mature forms of verbal communication (Bion, 1959).

During the same time period as that in which Bion was applying his reductionistic approach, field research was ongoing in an attempt to study the ways in which animals "catch" each others' emotions. For example, monkeys were found to be able to communicate their fears through facial expressions, voices, and postures which allowed other monkeys, catching their fears, to institute avoidance behaviors. Indeed, researchers found that monkeys can learn to discriminate between dangerous and benign situations based on the facial expression of a target monkey (Hatfield, Cacioppo, & Rapson, 1994).

### *Emotional Synchrony*

In humans, the process of contagion (catching) is a critical factor in the evolution of emotional convergence between two people. It is an automatic process that may be manifested not only in the social/behavioral environment but in the psychophysiological realm as well (Hatfield, Cacioppo, & Rapson, 1994). The primary automatic process in the behavioral realm is that of *mimicry* which contributes significantly to emotional synchrony. Researchers have demonstrated that people in conversation automatically mimic and synchronize their movements based on the facial expressions, voice qualities, body postures, movements, and significant behaviors of the other person, all of which results in an emotional convergence between them (p. 81). Emotional experiences result from either the mimicry itself (proprioceptive feedback) and/or the feedback one receives as a result of it. After surveying the literature and discovering strong support for these two ideas, the authors proposed that "... people tend to 'catch' others' emotions, moment to moment" (p. 11).

Just to highlight the research in the area of mimicry, I will summarize some of the findings. In the realm of facial expression, subjects not only monitor facial expressions and imitate them virtually from birth (Meltzoff & Moore, 1983, 1989), but there is also evidence that we imitate combinations of emotional expressions, especially the primary emotions such as fear, anger, surprise, and disgust. Certain social variables affect the degree of contagion though. For example, whether we like or feel close to someone is a significant determinant as to the likelihood and degree to which we might mimic them. In addition, the goal of our interaction with the other constitutes a powerful influence. It has

been demonstrated that subjects competing with one another manifested opposing facial expressions (Englis, Vaughan, & Lanzetta, 1982).<sup>1</sup> In general, social systems tend to become rhythmically organized rather quickly and automatically (Hatfield, Cacioppo, & Rapson, 1994). Voice patterns become synchronized along numerous characteristics such as speech rate, accents, vocal frequency, response time lapse, and duration of vocalizations in a particular exchange.

Comparable to the findings involving facial expression and voice quality, a similar tendency toward mimicry can be found involving the musculature. Subjects watching others engaged in physical activity automatically show increased activity in the same muscles that are being used by the target subjects. For example, in one study, subjects viewed models arm wrestling and others that stuttered. Muscle activity, measured via electromyographic activity (EMG), was greater in the subjects' arms while watching the arm wrestlers and greater in their lips while watching the stuttering models (Berger & Hadley, 1975). Postural imitation also tends to be rhythmic and most often nonconscious. Social psychology researchers suggest that displaying a similar posture as another transmits a message of understanding of the other's emotions or point of view (Schefflen, 1964; La France & Ickes, 1981; Mehrabian, 1969). Most importantly for the psychotherapy process, when two people are facing one another, the most powerfully empathic message is sent when their postures reflect each others (reflection symmetry) – that is, they both lean to their opposite side from the other thus creating a reflection (Bavelas, Black, Chovil, Lemery, & Mullett, 1988).

As with the aforementioned linking factors, synchrony of movements is also accomplished automatically, for the most part, and is virtually impossible to consciously duplicate. Similar to the situation with facial expressions, the nature of the relationship affects movement synchrony as well. As might be expected, the closer and more positively attached we are to someone, the greater the degree of movement or interactional synchrony (Bernieri, 1988; Tickle-Degnen & Rosenthal, 1990). However, mother–infant research studies suggest that if the desire is to optimize our attachment to the other (infant), then intentionally adopting a *midrange* level of movement coordination with him or her rather than a perfect mirroring (synchronization) is most effective (Beebe, Knoblauch, Rustin, & Sorter, 2005). This involves a conscious cognitive process to negate or cancel the automatic tendency toward mimicry and to create a certain degree of behavioral/postural coordination with the infant resulting in a modicum of both sameness and otherness.

The clinical situation includes factors that may enhance or obstruct the therapist's capacity to catch communications from the patient (and vice versa). Historically, the therapist's alertness to the contagious process of emotional communication has been emphasized since the days of Carl Jung (who differed from Freud on this issue). Jung warned that the therapist cannot and should not try to detach himself from his own emotions and that they are an important component of the communication process. He actually used physiological measurements such as pulse rate and breathing rates as well as skin conductivity to determine whether there was an exaggerated emotional condition in the patient, hinting at the presence of a complex. Just as critical, though, was a reliance on his intuitive sense of the patient and Jung believed that as the familiarity of the patient

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<sup>1</sup> For a compelling example of how facial expression affects the ongoing therapy process, see the detailed example provided by Beebe (Beebe et al., 2005, pp. 89–143).

and therapist increased, that he could use his own intuition or emotional state to sense the emotional condition of his patient (Hall & Nordby, 1973).

In current times, a therapist has several sources of information with which to assess the patient's emotional state(s). He may use the patient's verbal descriptions or his behavioral "report" (i.e., facial expressions, posture, movements, voice, behaviors, etc.). A third source, of course, would be the aforementioned emotional reactions he has to his patient. Not only does attending to the patient's behavioral characteristics and our moment-to-moment emotional reactions to her allow us to look beyond self report, but there is evidence to suggest that while our *perceptions* and what we attend to are affected by a priori expectations, our emotional reactions are not (Hatfield, Cacioppo, & Rapson, 1994). That is, regardless of preconceived notions as to what we will find, emotional contagion leads to a more reliable picture of the patient's emotional state. Furthermore, it provides a clue, a warning of sorts, when what we catch emotionally differs from the patient's verbal narrative; this may constitute a source of correction for the therapist.

### *Physiological Synchrony*

As mentioned earlier, the process of contagion is mediated through the physiological realm as well as the behavioral. For the sake of brevity, I will only summarize the trend of research findings in this area. The autonomic nervous system (ANS) is heavily implicated in the physiological synchrony of two people in relationship and, therefore, is especially relevant to the psychotherapeutic process. Indicators such as the observer's heart rate, skin conductance, and somatic response are positively correlated with those of a viewed target and are instrumental in assessing the intensity of his *negative* emotions. However, this covariation, in the context of a target's *positive* emotions, does not result in consistently accurate assessments. Overall, though, our ANS does represent a significant informant as to the other person's emotional state as long as we are in a positive, caring relationship and not in an oppositional role (Levenson & Ruef, 1992).

In sum, emotional synchrony between two people occurs primarily via automatic processes, particularly through mimicry of facial expressions, voice qualities, posture, and movement. The rudimentary capacities for this are literally inherent—present immediately after birth. Physiological synchrony involves the ANS in which people automatically synchronize with (i.e., mimic) the somatic states of others, especially the intensity of the other's negative feeling states. There appears to be a complex, situation-dependent relationship between emotional and physiological synchrony where in certain cases the former initiates the latter while in other contexts the reverse is true (Levenson & Ruef, 1997). The exact nature of their relationship remains unclear. Nevertheless, they both are nonconscious processes—automatic tendencies to mimic another resulting in a convergence of emotional states. This process is precisely what is meant by emotional contagion (Hatfield, Cacioppo, & Rapson, 1994).

### *Mirror Neurons*

The neural substrate of emotional contagion has been greatly clarified with the discovery of mirror neurons—a subset of multimodal neurons (Gallese, Fadiga, Fogassi, & Rizzolatti, 1996; Rizzolatti & Arbib, 1998; Rizzolatti & Sinigaglia, 2008; see Wolf, Gales, Shane, & Shane, 2000). What we have learned is that by observing another's actions or even hearing them (audiovisual mirror neurons – Gallese, 2003), the same area of the brain becomes activated that would if we were performing that action ourselves. In other words, the same neurons fire when we perform that action or merely observe it. Recent

research is beginning to clarify more precisely what happens in the brain that allows us to catch and feel the emotion from the observation (e.g., facial expression, posture, voice patterns, etc.) of another. According to the findings, the transmission of one person's feelings to another does not depend on associational inferences or cognitive processes. Rather, the underlying, automatic neural process involves primarily the insula which appears to be the center of the mirror system and acts as the location for visceromotor integration; it allows for the transforming of sensory input into visceral reactions (Rizzolatti & Sinigaglia, 2008; Damasio, 2003).<sup>2</sup>

The research on mirror neurons and empathy is in its early stages and will not be fully explored here. Suffice it to say that there is significant controversy over whether the brain's automatic mirroring system allows us to understand not only actions but the *intentions* of those actions. There are those who believe that we cannot infer intentions because they include desires and beliefs (Borg, 2007), while others assert that the mirror system does have a role in intention understanding but it is still unclear as to the nature and extent of it (Sinigaglia, 2008). There are at least two lines of research that currently seem promising: (1) we have begun to understand that, in monkeys, specific neuronal chains in the inferior parietal lobule activate in circumstances that imply intention understanding—they differentiate actions according to its final goal (Fogassi et al., 2005; Fogassi & Ferrari, 2007); and (2) in humans, *context* seems to be critical in the comprehension of intentions (Iacoboni et al., 2005).

### Empathy and Imagery

Despite the fact that researchers do not always agree on the definition of empathy, virtually all researchers, theorists, and clinicians agree that it extends beyond emotional synchrony or attunement to another person (Stern, 1985; Rizzolatti & Sinigaglia, 2008; Damasio, 2003).<sup>3</sup> In fact, empathy is typically thought to include both an emotional resonance and a cognitive component. For example, Stern (1985) defines empathy as involving four sequential processes: (1) emotional resonance; (2) empathic knowledge gained from that resonance; (3) use of this knowledge to form an empathic response; and (4) a temporary role identification with the other (p. 145). The process of feeling another person's emotions at a visceromotor level, that automatic process which we now are attributing to the brain's mirroring system, is not the equivalent of empathy. We must be able to go from emotional sharing and attunement to a state of "knowing." But how is this accomplished?

All definitions of empathy have in common one's ability to "take the perspective of the other person" (Decety & Jackson, 2006) via our imagination. As Gordon Allport (1961) suggested, empathy involves the "imaginative transposing of oneself into the thinking, feeling, and acting of another." How do we "image-in" what it's like for that other person to feel what she is experiencing? The use of imagery represents a cognitive linking mechanism to help us transition from emotional sharing to empathy. While we cannot

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<sup>2</sup> The insula's location at the convergence of the temporal, parietal, and frontal cortices facilitates its involvement with the reception and integration of various sensations such as taste and the reception and processing of various other somatic sensations including pain and vestibular function (Siegel and Sapru, 2006).

<sup>3</sup> Gallese (2003, p. 177) extends the notion of empathy to include not only explicit behaviors but "implicit certainties" that go beyond emotions to include body schema and somatic sensations.

know the images of the other unless they are verbalized, through physiological synchrony and the emotional state we catch from him, mental images are evoked from the neural mappings of our own body states reacting to the other or, more precisely, the perception of these states—our feelings (Damasio, 2003). If we also consider the idea of intersubjectivity and the notion that the intersubjective third (Ogden, 1994b) is a coconstruction of the two participants, our images are typically not random but emanate from two related but separate sources: (1) the emotional state of the other; and (2) reactions to cocreated intersubjective events that are evolving in the treatment process. In a cyclical fashion, they are both by-products and informants of our “intersubjective consciousness” in which patient and therapist are aware of some aspect of the other’s experience and have a sense of its relation to their own (Stern, 2004, p.131). Because the images that each person experiences are imbued with his unique autobiographical footprint, we are virtually *never* able to know his precise subjective state<sup>4</sup>; nevertheless, images represent a critical path toward deepening our understanding.

When we speak of images, we are not only speaking of the neural patterns related to input from the five basic senses (exteroceptive). We also include those that map our internal world (interoceptive), such as visceral events, muscle activity, body movements, and so on (Rothschild, 2000). Mental images may arise as the result of our immediate, voluntary attention and perception or they may arise from recall—often involuntarily and automatically because they are held as potentials in our memory system. Any of these images may in turn act as a source for the evocation of further images from the distant past—in other words, from the comprehensive accounts of our collective past experiences.

The process of how mental images actually emerge from neural mappings is not well understood at this point. The mappings of body states may be stimulated by an event within the internal world of the organism or may be triggered by external stimuli. Damasio’s (1999) idea is that there are three areas in the brain (areas of neural mappings or patterns) to accommodate three types of images: (1) an image space where explicit images received from the senses exist in explicit form (e.g., what we see, smell, touch, etc.); (2) a space containing the patterns that create an image of the body being disturbed by the object (see explanation below); and (3) a *dispositional* space.<sup>5</sup> The latter is made up of entirely nonconscious (implicit) dispositions, records of potential, that help facilitate or mediate the processing of images both from current actions/events and those from recall. While dispositions are always unknown to us, they can and do affect us via such things as hormonal changes, muscle activity, and so forth. In other words, what we are eventually conscious of are the manifest workings or derivatives of dispositional records—the evidence of their existence. When we all of a sudden become aware of a memory or an isolated image or we find ourselves having a modified perception of an event or object with or without a plausible explanation or connection to what we are currently focused on, we are witnessing the silent effects of dispositional representations.

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<sup>4</sup> Individual subjective experiences are known as qualia. In essence, a quale refers to our experience on a phenomenological level (Pally & Olds, 1998). Panksepp (2000, p. 24) has coined the term “equalia” to describe the phenomenological experience that emerges evolutionarily and can only be inferred from explicit experience.

<sup>5</sup> There are several theories of image formation, but they primarily if not exclusively concentrate on visual imagery because it is most accessible to experimental study (Crick, 1994; Kosslyn, Thompson, & Ganis, 2006). I have chosen to concentrate on the work of Damasio because his is a theory of sensorial images in general.

All memory exists in dispositional form which, as mentioned earlier, lives in the brain as potentials for activation—a potential to move from the implicit to the explicit.

The neural hardware for dispositional representations is referred to as a “convergence zone” (Damasio & Damasio, 1998; Damasio, 1999). According to Damasio, the formation of our subjectivity happens in the following manner. When we react to a stimulus in the external world, the brain creates not only the image of the object (neural mappings of the object’s various qualities such as size, shape, and color which the brain automatically integrates) but also a *description of our body reacting to or being disturbed by the perception of that object*. An image is generated from this description. The two images, one of the external object received through our sensory channels (explicit) and the other of the body being disturbed as it reacts to the object/event (implicit or explicit), are held simultaneously or in rapid succession to one another in a third area, the convergence zone, which is reciprocally connected to the mappings of both these images (Damasio & Damasio, 1996, 1998). With regard to the emergence of our subjective self, the brain forms the neural pattern of the self in action—that of “an organism in the act of perceiving and responding to an entity” (Damasio & Damasio, 1998, p. 25). In other words, there is a dispositional representation of the self as it is changing in response to the external stimulus. As stated earlier, this occurs on the implicit level which is why we are caught off guard when we suddenly experience past images now in explicit form. Dispositional representations, operating in working memory, may also influence us to focus on a specific aspect of an image or memory or to linger on it to the exclusion of others. They hold the key as to how we react initially and secondarily to an event.

### Clinical Example

In an attempt to provide some clinical grounding for the concepts I have been discussing, I will present a vignette that illustrates the imagery of the therapist and its relationship to both the empathic process and to emotional contagion. The idea is to illustrate how the affective involvement of the therapist with his patient, in an ongoing attempt to adopt and maintain an empathic posture, leads to the formation of images—“mental signals” that are informative as to the emerging, moment-to-moment experience of both participants.

Lisa, a young professional woman, has been in analysis with me for several years. At the time in question, she is both in the late stages of working through the loss of a previous relationship and is currently struggling with her attraction to a young woman, Carol, with whom she shares some recreational activities. After Lisa initially contacted Carol, inviting her to lunch, there was an enthusiastic response. However, for a number of reasons, nothing had actually materialized. Lisa had sensed that she was receiving conflicting messages and had begun to wonder what went wrong, what kind of person Carol might be and had she (Lisa) miscalculated the situation based on Carol’s initial, positive response to the patient’s invitation. She also fantasized what it would be like had they begun to spend time together. In this hour, Lisa has been discussing both her previous relationship and her dwindling hopes of having a relationship with Carol.

P: Mostly I struggle . . . withdrawal from Carol on my part is okay . . . I’m trying to give myself permission.

T: (confused, because my thought was that nothing had ever really occurred in the form of a date or a meeting of any sort) Withdrawal as in . . . (pause) . . . from what? (said with puzzlement and a conscious sense of curiosity)

P: (brief silence) I feel ashamed . . . I don't think you intended it that way, but I feel that way . . . Oh, God . . . there's nothing I can say or want to say. I guess it feels like I don't want to be connected. I could use a little bit of space. (silence)

As the session ended, the patient's words and posture indicated that she was overwhelmed with shame. I felt shaken as well as regretful that I had said what I did. In the following days, thoughts of Lisa canceling the next session (which she had never done despite several previous episodes of arduous struggles) entered my mind. However, she did come for the next session but described herself as "pretty down" and "worn out." I was concerned as to how deeply I had injured the patient and how this would reverberate through the current state of our relationship. I had thoughts of myself as an intruder.

The following hour is the subject of my focus for this discussion. Lisa entered the room and smiled at me as she approached the couch. As I looked at her smiling, a sensation of warmth washed over me from head to toe. I recall a vague pleasurable sense of something stirring inside that felt like a closeness and I recall thinking how much I appreciated her.

P: So I'm feeling better than Monday—the session (last week) hurt so much. I don't want to feel it. . . . I struggle when it hurts because I feel there's something I'm supposed to do but I can't . . . it's true, there's just a way, when things hurt that bad, I don't want to be near anybody because there's a risk that anything said will make me feel worse. (A few minutes later) I don't feel like I have to completely avoid it—some amount of gentle looking at things is okay . . . .

The patient gently cautions me to be careful as we go through but encourages us to move forward. Again I feel this warmth in my body and then have the image of two index fingers that have been pricked and they are touching so as to transfer blood—one to the other. I immediately think of blood brothers and have a vague recollection of childhood friends with whom I became blood brothers. A few minutes later I shared this imagery with the patient.

T: I was just now having the image of two fingers that have been pricked by a pin, they're touching together and sharing each other's blood—like the two people are becoming blood brothers. Do you know what that is? (I was suddenly aware of our significant age difference and wondered if she had ever heard of this)

P: Yeah, I do. (brief pause) Wait, are you talking about a straight pin or a safety pin?

T: I was thinking of a safety pin.

P: Me too, I thought of a big safety pin with a duck's head on one end (we both chuckle momentarily at this image).

T: (shortly after) It seems you were imagining a bigger pin than what I imagined. You were more aggressive than me (said with humor).

P: (after several minutes of associations and discussion the patient returns to make a point) Wait, I'm stuck at the idea of me being more aggressive (silence).

T: Maybe you think aggressive is bad (an ongoing fear for Lisa).

P: Yes I do (she laughs as she gets up to leave).

Near the end of the hour, or perhaps moments after, I had an elaborative memory regarding the safety pin. I recalled my grandmother changing someone's (probably my little sister's) diaper in the kitchen as I watched. As she showed me the safety pin and was about to fasten the diaper, she cautioned me to always be careful or "*you could hurt someone.*" The other body image that lingered was the intense feeling of warmth that had swept over me in the session. I kept returning to it over the next few days and an image emerged of a red-orange horizontal bar of light sweeping through me slowly from head to toe.



## Discussion

My intention in presenting this treatment episode was to provide a clinical encounter illustrating the action of linking mechanisms in treatment. More specifically, the therapist's desire and attempts to listen intently for the purpose of achieving increasingly accurate states of empathy precipitate a chain of events involving the establishment of an emotionally contagious atmosphere between the two participants. For the therapist, the body experience associated with a visual image (the patient's facial expression of smiling) represents a type of nonverbal communication that has developed in the dyad.

Before continuing, I would like to acknowledge that the discussion presented here is an attempt to deconstruct the process of achieving empathic states from a neurobiological perspective with a particular emphasis on imagery. As such, there is no attempt to explain empathic failures and what may have precipitated them nor is there a focus on underlying, unconscious currents such as enactments. Although these are critical elements that would help illuminate the clinical process, they are not the focus of this essay.

It would be impossible to definitively answer the question as to why I experienced particular images at certain moments. However, it seems likely that sensorial images are not random but rather an important form of communication. If we consider the notion that the therapist embodies the patient in a certain fashion and vice versa, the images he (therapist) experiences are indeed critical as a means of communicating *his version of the patient's experience*—in this case, a sense of mutual cooperation, appreciation, and a desire for safety.<sup>6</sup> But are all the therapist's images of equal importance, or do some carry a higher valence than others? We will explore this and other issues as we examine this clinical example more closely.

If we analyze the treatment process from a neurobiological perspective, we begin with my initial visual image of the patient's smiling face. This would be the image of an external event or object in Damasio's scheme. My body reacted to the object and the brain first created a description of the body-in-reaction followed by the creation of an image of it. In this case, my experience of warmth, a somatosensory image, constituted the image of my body-in-reaction. Both of these images (actually their neural mappings), that of the smiling face and the image of warmth (i.e., the perturbed body in reaction), are held side by side or in "rapid interpolation" (Damasio & Damasio, 1998, p. 25) in working memory. As explained above, the convergence zone has reciprocal connections to both of these image patterns and is thus able to build a third image—that of the self changing as it responds to an object, the dispositional representation of the self (Damasio & Damasio, 1998). In this example, we would say there is a basic recognition that it is me, my body and my unique self that is perceiving and reacting to the smiling face. However, we do not know the exact neural foundation of how it is reacting because the dispositional image is always nonconscious. As records of potential activity, dispositions are involved in the

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<sup>6</sup> Gallese (2003) introduces the notion of "embodied simulation" (p. 174) wherein the observer (therapist) automatically and nonconsciously can "penetrate the world of the other." This is mediated at the neural level by the existence of the mirror neuron system. While affective resonance may be explained as an automatic process, I would agree with Rizzolatti & Sinigaglia (2008) and others who state that this automatic process is a necessary precursor of empathy but that the latter is much more complex, involving compassion, the nature of the relationship between the two persons, etc. The difference between an automatic process of embodied simulation and empathy, therefore, involves processes of reasoning and imagining oneself into the circumstances of the other (See Figure 1).

nonconscious attempt to construct, in the present, an image that is derived from the person's experiential past. Thus, my image of two touching fingers was an image from memory now reactivated by the dispositional patterns which resulted from the current patient-therapist interaction. The constructed image is usually not a precise replica from the past but an approximation—colored by the current context in which it is produced.

While we cannot explain exactly how or why the particular image of two fingers emerged (out of the many millions or billions of possibilities), we can begin to discuss the elaboration of images that evolved from it. Dispositions influence the degree of focus and attention we give to a current image, allowing the brain, in certain instances, to elaborate and extend the original image using pictures from memory. Thus, the image of fingers was elaborated to include a safety pin (which was further elaborated by an outside source—the patient's image of a big pin with a duck's head), subsequent memories of the blood brother "ceremony" involving two childhood friends, and eventually, the memory of my grandmother warning me to be careful as she changed the baby's diaper. It is virtually certain that at least two events in this hour did occur but did not seem to be primary linking mechanisms. First, numerous other images were available in my working memory (and the patient's as well) yet did not materialize in any conscious fashion and, second, most images that did reach consciousness dampened quickly in favor of those I have been describing. In a sense, there was a type of evolutionary or selection process in which some images survived while others faded. As mentioned above, the notion of dispositional representation suggests that the neural mappings in the convergence zone have the potential to trigger other images from memory and cause these to persist; thus they may potentially become a candidate for further elaboration in a type of associative chain.

I would like to suggest one possible explanation as to how this selection process might evolve, that is, how certain images become the focus of extended attention and elaboration while others seem to dampen out. The therapist's neural circuitry implicating the contagious process between himself and the patient (the physiological and emotional synchrony that develops) in turn becomes part of a neural loop and proceeds to act as an informant. In a sense, it assigns a greater valence to certain images—those that are congruent both in coloration and intensity with the affective ambience that is present in him. In the interactive process between patient and therapist, the two "catch" signals from one another along one or many sensorial pathways. Feelings instantaneously evolve from emotions as the brain processes the reacting body state and subsequent images are formed as well (Damasio, 2003). As the therapist tunes into the patient's behaviors (e.g., voice, posture, movements, etc.), the cocreated emotional ambience is typically reinforced which creates a similar category of feeling (generalized body perception)—thus narrowing the sector of images available from memory to that which is approximately congruent with the prevailing emotion. Pain or pleasure (Damasio, 2003) is the initial possibility in terms of gross affective coloration, but then the intensity of emotion, as received from the patient, acts as a further selection device that narrows the possible images which dispositional representations may evoke from memory. In the hour, Lisa's original smile was essentially the first selection marker for affecting subsequent images. It constituted a "first pass"—initially narrowing the available images to the category of pleasure not pain. This image led to a description of warmth in my body with accompanying thoughts of appreciation. The patient catches this in my voice and/or choice of words as I am working within a posture of empathy. Soon thereafter, the patient encourages us to continue exploring ("some amount of gentle looking at things is okay. . .") despite the shaming experience from a week ago and, once again, I feel the warmth and enhanced appreciation. Consequently, my experience of our cooperative spirit has become intensified. Notice that

immediately after this particular interaction came the image of two fingers sharing blood with the concomitant notion of blood brothers which, from my experiential past, represented the ultimate partnership. It symbolized a state in which each person was dedicated to the welfare of the other in a manner beyond casual friendship. In other words, the particular images evoked seemed to correlate with the growing positive intensity of our relationship.

In the spirit of complexity and inclusiveness, however, we must consider an alternative meaning for the image of blood brothers. Perhaps, as a possible enactment theme, this image symbolized a form of aggression (i.e., collaborative partners in an aggressive act), for example, that did not reach consciousness but, nonetheless, could have been influencing both participants. This underlying aggression could have precipitated the earlier rupture and future ruptures as well. In the context that was present in the above example, though, the more positive meaning of a collaborative, constructive partnership emerged to consciousness and seemed congruent with my experience of the patient in the moment.

Thus, the momentary intersubjective ambience that develops between patient and therapist is critical in the automatic process of assigning a kind of valence or level of importance to certain images that then may cross a threshold to consciousness while others do not. In addition, the empathic process allows for further fine tuning in terms of the intensity of the feeling states and acts as a further selector of possible images. A certain priority is given to those that reflect the intensity of disturbance of the reacting body state or, in other words, to the intensity of the felt experience.

Overall, according to my hypothesis, as the therapist experiences (sensorially) the external events emanating from the patient in his (therapist's) body, the image process evolves from gross coloration (pain vs. pleasure) to enhanced nuancing, including felt intensity. The physiological and emotional synchrony between the two participants creates a feedback loop between external and internal events in which the brain's dispositional records are directed (by the reverberating body signals), in a sense, to pay attention to those images that are more or less relevant and congruent with the affective ambience that currently exists while essentially ignoring others. It is the brain's prediction or educated guess. In turn, these images represent feelings in the therapist that are communicated back to the patient either explicitly and symbolically (e.g., I shared the imagery of blood brothers) or nonsymbolically (e.g., tone of my voice). As the experiences of both patient and therapist reverberate in enhanced states of resonance, the imagery continues to move toward greater specificity. For example, the patient shared her specific image of a safety pin that had a childlike quality (duck's head) which seemed to indirectly emphasize the safe path we both were seeking and, shortly thereafter, I had the memory of my grandmother cautioning me to be careful.

### *The Role of Affect Regulation in Maintaining an Empathic Posture*

While our images are critical to the process of relating empathically to the patient, inhabiting a position very close to their perspective, they can compromise it as well. In her attempt to achieve and maintain an empathic connection, the therapist is vulnerable to disturbing images related to the patient's narrative description and/or to the resurrection of her own memorial images. This is especially relevant in the treatment of severely traumatized patients. Affect regulation is generally considered one of the essential ingredients in maintaining an empathic posture (Decety & Jackson, 2004, 2006). It is imperative that we be able to self regulate for the purpose of maintaining a distinction between self and other during the intimate process of relating empathically when we are

attempting to move closer and closer to the subjective state of the patient. This is critical in avoiding a potential state of merger which could precipitate debilitating anxiety in the therapist. One method to help prevent merger is for the therapist to imagine herself in a more positive situation or circumstance than what exists in actuality. For example, she can imagine herself as detached and unaffected by the patient (Decety & Jackson, 2006). But can we really fool the body? Neurobiologically, we do have the ability to simulate emotional body states in that the brain can create maps of these states that essentially paint a false picture. In fact, this is exactly what occurs in the process of empathizing. We imagine the perspective of another, as explained earlier, and the brain creates a map that reflects an “as if” situation (Damasio, 2003). As an example from everyday life, this “as if” scenario is precisely the working mechanism behind medications, according to Damasio (2003), in which the actual body state is one of pain but the neural mappings underlying this state have been altered by the medication so that we feel something other than pain (or a milder form of pain). In addition to the use of the imagination to help regulate ourselves and avoid states of merger, pacing and certain sensorimotor techniques can be helpful as well (Ogden, Minton, & Pain, 2006).<sup>7</sup>

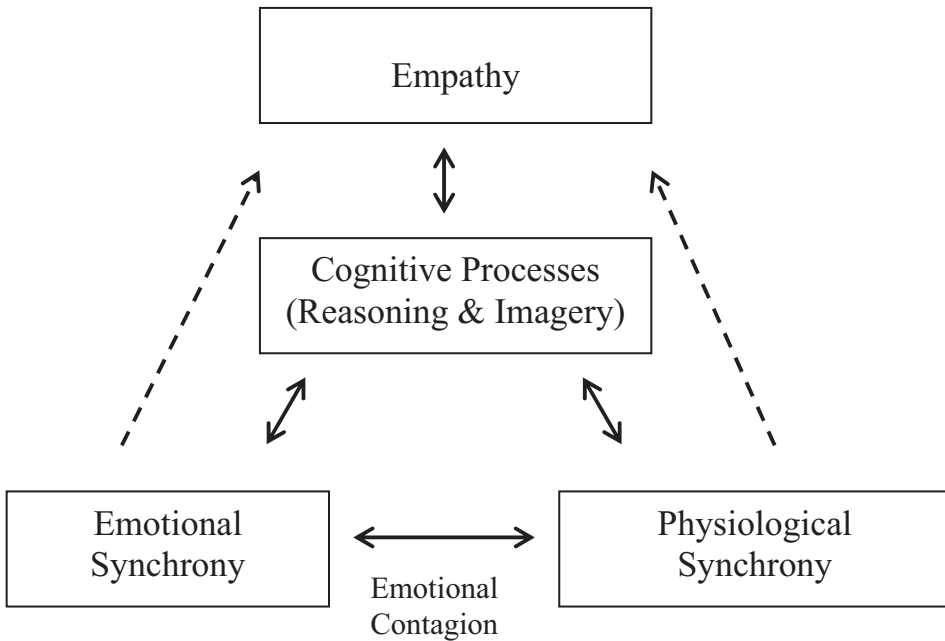
Thus the process of imagining (i.e., creating “as if” states in terms of neural maps) has a dual role. It helps us to inhabit states that increasingly approximate that of the patient (empathy) but, when needed if things get a little too close, it can also be useful in the self-regulation process when the therapist intentionally creates an internal state(s) that essentially distinguishes herself from the patient therefore creating or reinstating a healthy self-other boundary. The main point being that affect regulation is crucial to the restoration of a cognitive-affective balance throughout the treatment process and constitutes a significant ingredient in our attempt to *maintain* a healthy empathic relationship with the patient once it has been achieved.

In sum, linking mechanisms in the interactive process between patient and therapist include an atmosphere of emotional contagion and empathy. The therapist’s act of attending closely to the patient, on explicit and implicit levels, leads inevitably to an atmosphere of emotional contagion. Physiological and emotional synchrony are automatic processes driven primarily by the brain’s mirror system and constitute necessary but not sufficient conditions for empathy (see Figure 1). An empathic position also requires the cognitive process of adopting the perspective of another person, while, at the same time, not losing the distinction between self and other. Externally generated as well as internally generated images are critical for achieving more nuanced and accurate states of empathy. They not only inform us about the macroscopic qualities of the patient’s implicit or explicit affective experience, the gross coloration, but also allow us to fine tune our understanding of the patient’s emotional intensity. At the same time, voluntarily imagining, when necessary, may enhance our ability to self regulate, preventing a loss of self-other differentiation which could compromise the integrity of our analyzing consciousness.

The process of surrendering to our internal world, attending to those particularly vibrant and persistent images, is one essential prerequisite for working along empathic pathways in treatment. In the attempt to understand our patients as deeply and profoundly as possible, the automatic processes of the brain’s mirroring system are certainly necessary and extremely helpful but yet not sufficient. It is imperative that we attend carefully

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<sup>7</sup> Siegel (2007) cites the hypothesis of Iacoboni that there may be “supervisory mirror neurons” that aid in allowing us to get close but still maintain separation from the other’s experience.



### The Components of Empathy

*Figure 1.* Accurate empathy includes: (1) the automatic bidirectional processes of emotional synchrony and physiological synchrony (mediated by emotional contagion) which are necessary but not sufficient (—) for empathy; and (2) cognitive processes—particularly rational analysis and the use of imagination which is critical in adopting the perspective of another and for purposes of self-regulation.

to the evoked imagery that is generated within the intersubjective consciousness of the two participants.

As infant researchers discovered years ago, we are wired for relational action from the start—imitation, attunement, and gradually the capacity to achieve empathic states, all emerging in a dyadic surround between mother and infant/child. There exists an ongoing reciprocal process where each participant informs and fine tunes the information her partner catches but does so along communicative paths that are often not explicit and/or verbal. Certain signifiers, such as images, provide important clues as to the existence of ubiquitous subterranean communication. The complex process of relating in this manner (along implicit, nonsymbolic and/or nonverbal symbolic pathways)<sup>8</sup>, which we are only beginning to comprehend, occurs in the treatment domain as well. Because the therapist aims for the achievement of a deep understanding between herself and the patient, as the mother does with her child, we should not expect anything significantly different.

<sup>8</sup> See Bucci's (1997, 2001) "circle of communication" for a similar description of this process from a cognitive science perspective.

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