

THE RELATIONSHIP BETWEEN PESSO SYSTEM PSYCHOMOTOR THERAPY AND A NEUROBIOLOGICAL MODEL

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Twenty seven years ago my wife, Diane Boyden Pesso, and I co-founded Pesso System Psychomotor Therapy, (which in the rest of this talk I shall refer to as PS). From the beginning, we constantly sought ways to clarify and explain the ideas, processes, and techniques behind the work. Being artists by nature and training we used terms that were metaphoric, allegorical, and poetic which would support the goal of establishing clearer and more practical procedures for this continuously evolving work.

Those words and ideas are not only rich in meaning for us but for many other professional therapists and have resulted in PS applications at many institutes and psychotherapeutic centers. Though the terms are not scientific, they are practical and have shown that they can explain certain fundamental laws of emotion induced behavior that result in producing those kinds of changes that allow clients to live happier, more meaningful lives. In short, this language has allowed us to communicate the fundamental processes of life and therapy that are encountered in PS.

We worked continuously to systematize the process so that it could be duplicatable and understandable, allowing others to learn it and produce the same kind of therapeutic outcome. This effort has been accomplished there are training programs in PS in America and Europe which are turning out well trained PS therapists.

In recent years I have become interested in finding ways to describe the processes in scientific terms so that professionals in other sciences could more readily relate to PS theories and techniques from the standpoint of their own disciplines, theories and research. Those disciplines that I hope to reach are neuro-biology, computer languages, artificial intelligence and psychotherapeutic research in general.

In this attempt I hope to achieve even further effect and application of the work, thus adding new elements to the rich pool of knowledge about how human life proceeds.

In 1975 I first met Han Wassenaar in a PS group. He was then entirely involved in neuro-biological research, especially on the level of synaptic organization, research on psycho-active drugs, and discussions in the field of biological psychiatry. As we grew to know each other better some cross fertilization began to develop. He became interested in what I did, because my work concerns people which are psycho-somatic and neurobiological entities and it was natural for me to be interested in what he did for I wanted to know what it was from the viewpoint of neuro-biology that might support the psychological processes which I had become so familiar with.

This talk is our first attempt to publicly present our ideas together, hopefully in a way that will be illuminating to both neuro-biologists and to psychotherapists of all kinds. We shared the urge to bring science to this work, for having followed the process for so many years, we always noted that the work followed fundamental patterns which are repeatable and therefore could be described in scientific language.

Our collaboration culminated in the development of a sensor-psycho-effector model. This model attempts to bridge and connect the two fields of neurobiology and psychotherapy. This is the model demonstrated here. The model represents the psychic domain, which is directly and completely connected with the central nervous system. In this psychic domain we postulate two essential terms, filters and gates.

We have defined filters as the derivatives of that neuronal circuitry (most probably cortical with many subcortical connections), which controls the entrance of messages with potential meaning coming from the outside world (environment and body) into that part of the psychic domain where levels of meaning, cognition and attention are added to these messages. There, these messages become images combined with meaning. Filters, in PS terms, are connected with the notion of receptivity and experience based on memory.

We have defined gates as the derivatives of that neuronal circuitry (most probably cortical with many subcortical connections), which control and modifies the expression of meaningful messages or images. Gates, in PS terms, are connected with the notion of expression and self realization.

With these two definitions we can make a connection with the PS principle of vulnerability related to the filter stuff and with the principle of power related to the gate stuff.

In PS, we use the terms Power and Vulnerability to represent the polarities in the continuum of compelling forces residing at the core of human beings. In this paper we use the term core to represent the word soul which is the word usually used to represent this concept in PS. This is done in order to less disturb the sensibilities of those scientists who may find the word soul too much associated with specific religious concepts.

Core is the name given to that particular collection of evolutionary history deposited in an individual by that unique combination of genes inherited from one's parents. It includes those tendencies which incline human beings to take in the world, and those pressures which push it to be born into the world, into reality, into consciousness. To repeat, core is another word for all the human potentialities between the continuum of power and vulnerability.

How might neurobiology handle these two concepts: vulnerability and power? Let us try: vulnerability is expressed by receptivity in open filters. This is an analogue for activated sensors, including their neuronal networks. This sensory input is combined with old information. The combined information leads to new messages which can result in the opening of gates for the expression of power. This is an analogue for output. In other words the reception of stimuli initiates a process which finally may lead to an expression - output. We conclude with a relatively simple statement: activated filters may lead to activated gates.

In summary, the essential features of the core are reflected in and modified by the filters and the gates. There is ongoing activity between filters, taking in the world, and gates, permitting expression. This activity I will later further describe in the process called ego wrapping.

In PS the term Ego signifies the conscious, learned self and includes the information about life collected and recorded from individual experience and history that is stored in the memory of a person. We use the term self to indicate the combination of the core and ego. The ego is that part of the self that is created by the core's contacts and interactions with the outside world. The ego is that part of the self that is conscious, that exercises control and capacity to moderate the energies of the core that converts reality into meaning and symbols. It is the agency by which we consciously live the core and have the image and identity of ourselves as separate beings from the rest of the world. I will say more about the PS definition of ego further on.

We have to note that both in PS and in the model each psychosomatic entity is dependent on two realities, the environmental and the body reality. That is, the sensory information coming into the psychic domain arrives from both the environment and the body. Not either or, but at the same moment. The representation of this reality in the brain is in terms of first order symbols.

We further note that the information stemming from these two realities is modified by genotypical (Core) and phenotypical (Ego) filtering. This modifying activity is a result of the well integrated complexity of the neuronal structures and networks in the brain. This complexity induces a new emerging property or a new dimension which we denote as the above-mentioned psychic domain.

The model reflects basic principles in the organization of pathways in the central nervous system - from the level of sensory input down to the level of effector output. Stimuli from the outside world and from the person's own body induce constructions of images of the outside world and of the body in the brain. Both sets of images stemming from the realities mentioned above exist only, of course, in the brain and in the mind of the individual. In other words, we only know the world from our symbolic construction. We can never know the world "purely as itself" or as pure reality. Also, we may know ourselves with our intentions, needs and wishes (core) just from the internal formation of self images (ego).

The model of course is an abstraction which gives us a way to understand how the here and now, the actual moment of experience, is modified and seen through the lens of history: evolutionary history and personal history. When events are being experienced by an individual and they enter the area of the filtered psychic domain, they immediately awaken those patterns in the memory system that are similar to those new events. The patterns of history are instantly intermingled with the present experience. The shapes of the present are matched with the appropriate countershapes of the past in the filters thereby allowing these events to enter consciousness and be given names, dimension and place in conscious existence. The memory systems induce in the actual moment the emotional force and impact of similar past events.

Thus, one can say, in the healthy, "normal" individual the filters and gates function well. And in such an individual there is no tendency either to hold the world out at the impressional sensory level (the filters) or to hold the self in at the expessional effector level (the gates).

With all this in mind, we look at the issue confronting therapists who must treat individuals whose functioning is impaired by their negative history. How to help those clients make changes that would allow the input of new experiences and the outgo of new expressions beyond the narrow range of options offered by their relatively closed filters and gates?. Or in simpler language, how to help clients feel more connected and open to outer and inner reality and more able to express who they really are in the world.

In considering the filters, we have to ask ourselves what happens to the information that is coming in from the outside world and from the body that may not be allowed access to that part of the psychic domain where cognition, memory making and awareness are available and ready to give the appropriate meaning to that information? This non-included information does not disappear but has already entered that part of the psychic domain where non-emotional (non-affective) memory, and consequently meaning, cannot be added. Then this non-integrated information will show up as inappropriate energy, sensations, behavior or tension in the body. In PS we begin the work of therapy by looking for just that kind of information, which we call energy. Certain recognizable ranges of body signals and certain recognizable ranges of verbal behavior betray this condition of non-inclusion.

In fact we are talking about the first cause of symptoms showing up in the body. This non-including phenomenon might well be a route or source for the development of neurosis and psycho-pathological conditions.

We have to ask ourselves a further question: what happens to the information that has successfully passed through the filters? Of course this information will now be processed, which means that meaning stemming from the memory system is added to that information. This information, however, is sometimes allowed by the gates to express itself and sometimes it is not. Once again, what we know now is that non expressible information does not disappear, but that it remains in this part of the psychic domain, which is in between relatively open filters and closed gates.

This information resides there as not consciously expressible and with as yet not fully named and noted meaning. This will be another cause of symptoms and inappropriate sensations in the body. This is the second cause for neurotic depressive and psycho-pathological complaints.

In conclusion the body becomes the storehouse and source of information about what has not yet been allowed conscious processing of events (closed filters) and what has not yet been allowed conscious expression of aspects of the self (closed gates). In this conceptualization, the body, through its capacity to feel pain, tension, temperature shifts, etc. includes another, unanticipated access to what is usually called the unconscious.

That stored information in the body is referred to as energy in PS. When I speak of looking for energy in PS I do not refer to the ordinary background sensations in the well functioning individual during unconflicted moving, breathing, digestion, cardiovascular activity, etc.. The sensations I speak of are those related with discomfort - a too rapidly beating heart, labored breathing, pain, tension, heaviness, coldness, unexpected and unplanned movement, - unease, having little or nothing to do with ordinary functioning All sensations beyond normal body functioning signs can be seen as indications of unprocessed perceptions and unexpressed actions and a lot of people have these sensations without attending to it or knowing it.

The underlying assumption in all of this is that there is an ongoing innate pressure and drive for being and becoming originating from our genetic structure which has determined how our brains and bodies are organized and constructed. That pressure is also in the symptom. Thus the basic given of this model and of any picture of life is that there is a fundamental evolutionary push toward becoming and manifestation that is hardly to be denied, and if denied, dearly paid for in terms of diminished functioning, body complaints and diminished pleasure.

Although the discomfort it gives is an impediment to normal functioning, the symptom in PS is also understood to contain valuable life information that could lead to the reduction of its associated discomfort. Not through its removal but through the procedure of allowing its information, experience and expression to pass through the inhibiting filters and gates with the help of PS role figures and techniques.

That leads us to consider what standards are used by the filters and gates for refusing entry and exit. How do the filters and gates become the way they develop? What positive purposes do the filters have if one of their functions can result in discomfort and unease?

The answer to the first question is that the standards are created both by genetic structuring and by contact with external events with significant individuals. The genetic information about elements that have shown survival value is kept and passed on through evolutionary processes. That historical information that significant figures in our lives have sanctioned, named and recognized then become embedded in the filters and gates by virtue of the memory system.

The answer to the second question is that the positive purpose of the filters and gates is to prepare us to live in the world as it has been understood and managed through evolutionary time and further to be understood and managed according to the conditions that have been met in our own particular lifetime.

Let me return now to the words core and ego and demonstrate the relationship between the two via two images and then link those images to the model. One, the image of shape/countershape - shape being the core and countershape being the ego. And two, the image of the ego as the skin of the core. In the first image, if the core is metaphorically understood as the shape of the body of an infant as it seeks satisfaction in relationship with figures in the outside world, then those figures can be seen as the countershape that meets and supplies the needs of the infant with what it requires to grow. With such countershaping satisfying interactions, all the surfaces of the child, reaching toward the outside world for realization, are sanctioned. In this metaphor countershaping meets and matches the needs which then gives sanction to the expression and satisfaction of that need. In the best of all possible worlds, the shape of the core should be accurately represented by the countershape of the ego.

In relating this image with the model, we can say that the memory system and its effect on the filters and gates is a record of how the outside world provided or denied appropriate accepting countershapes to the reactivity of the core. These countershapes are internalized in the ego, which resides in the memory system and is present in the filters and gates. A fully countershaped core would be the description of the healthy individual whose filters and gates permit maximum access to what can be experienced and expressed. This condition would arise if all the elements of the core had shown themselves to the parent figures and the parent figures had subsequently accepted all those parts, given names to them, given meaning to them, giving place to them in the world of external reality, thereby

giving those parts license to live not only in the world, but in the consciousness and therefore psychic domain of the child. That child history still lives in the psychic domain and body of the client.

Now let us look at the second image, the ego as the skin of the core. If the core were seen as a single celled organism, then the ego would be the membrane which defines it and separates it from the rest of the world. The ego then, would act as the interface between the core and the world, in touch with and able to modify and communicate with the interior and exterior realities. With ego boundaries the core remains singular, resistant to the possibility of fusing and merging with the rest of the world.

In relating this image with the model we can easily see the filters serving as a kind of boundary around that part of the core represented in the central nervous system. Thus, becoming the internalized skin (with its sensors) of consciousness and choice around the core. There it acts as a modifying membrane at the interface between the internalized world and the outer realities.

Let us return now to the word energy. In relationship to the first image, energy is that part of the core that has not yet been countershaped by the outerworld and therefore by the ego. In relationship to the second image, energy is that part of the core that does not yet have an ego skin.

Thus, energy, in this definition, is that alien part of the core having had no satisfying or validating relationship with the outside world, therefore no countershape. Having been given no skin, therefore has no place in the consciousness, but lives as a symptom in the body, without a name, without a place, without meaning, without memory or history.

Figuratively, parents, and all those who are entrusted with the care of children, are like the God of the Old Testament presiding over the creation of the universe, but who now preside over the creation of the child's psyche. What that old testament God has given names, dimension and function to and has blessed with the phrase, "And it is good," is allowed to exist in the universe. What the parents of a child has named, given dimension, function and blessing to is allowed to live in their universe and therefore in the universe of the child's ego. To extend this image further. the ego becomes the god of the psyche, deciding what shall or shall not exist in experience, expression and consciousness. Able to ban parts of the core from conscious existence with the same finality that God would throw sinning Adam and Eve out of the Garden of Eden. Such an ego would throw the unacceptable parts of the core out of the garden of ego.

Another metaphor used in PS is called ego-wrapping. The wrapping meant here is the wrapping of the core with ego. It is a similar concept as that of having an ego skin, but now refers to a procedure and technique, rather than science. One of the goals of PS therapy is to wrap those parts of the core, found through the energy in the body, with meaning, words, consciousness, etc., as one would wrap a naked child in a blanket, or wrap a nearly frozen ship wrecked sailor in warmth and safety, or wrap a precious gift in protective materials, carefully and with respect.

Now we are in the position to begin the description of the theories, techniques and in the PS therapeutic process called a structure and relate them to the model.

A structure is a controlled, organized psychotherapeutic/symbolic event that includes the restructuring of past emotional reactions and expressions during significant historical moments which resulted in the creation of important life channelling patterns (filter and gate biases). In a structure, all

the unprocessed energy (information) that has been stored in the central nervous system and therefore in the body as symptoms are given access to conscious experience and expression, are given names and allowed to have significance and meaning attached to them. Further, a structure includes the creation of a new symbolic event to provide those kinds of essential, countershaping interactions via the use of role-playing ideal figures who provide antidotal behavior to counteract the toxic behavior of the original negative figures.

The following are PS words which represent the sequence that structures follow and also the sequence that actual life follows in laying down memories. The words are Energy-Action-Interaction-and then the last word is a combination word Significance/Internalization.

In our picture of actual life, Energy represents the potentiality of power and vulnerability. I must include here the element of hope. The energies of the core imply that there could be a future where the satisfaction of those energies can be anticipated and realized. This is not just a fond hope for we know that anticipation is one of the properties of neuronal networks. One might say that the core has some form of information (anticipatory energy) in it about how the outer world should respond to its appearance. Something of this hope shows in the stubbornness of symptoms. Action represents the body behaviors and motor activity supporting experience and expression. Interaction represents the responses of the significant figures in the outside world. Significance represents the ego addition of conscious meaning. And internalization represents the storage of the meaning into the memory system.

Those four steps are fundamentals in raising a child in reality. A child first comes with its core or potential reactivity (energy and action) to its parents or caretakers. The parents respond with words, touch and behavior (interaction), in ways that are accepting or non-accepting of the feelings or behavior of the child. In other words they provide countershapes to the actions of the child that either satisfy and validate those shapes or frustrate or invalidate them. Those interactions are converted into meaning and stored as memory (internalization) which will influence the characteristics of its filters and gates when, in the future, similar figures are present. Those feelings and behaviors that the parents accept with satisfying countershapes are thereby ego wrapped.

Now let us look at those four words in terms of the sequences of a structure in a PS group. But before we do that we must first comment on the atmosphere that is created in the group by the PS therapist. The therapist extends what is known as the possibility sphere. The sphere carries the message, "Life is possible." There's a "yes to life" in it. It speaks to that part of the client that somewhere knows that life could be better. It says yes to the parts of their core that have as yet not been born. Yes to the energy in the body that is in its symptom form. It says yes to the hope in energy.

The possibility sphere is empty and puts no pressure on the client. But it is filled with the light of the therapist's attention, consciousness, intelligence, understanding and awareness. It's an illuminated space. So when the client enters it, they feel, without knowing it, the possibility of being seen, of being heard, of being understood. In a way they are surrounded by it as someone in a pool of water is outlined by the countershaping water.

Another necessary ingredient in the atmosphere is the element of caring that is in the therapist and in the group members. This caring develops and sustains trust.

When a client is ready to do a structure they are working on a response to the question. "What are you feeling in your body? What is in the foreground of your mind?" This is an attempt to seek for the energy as a way of determining what will be worked on.

The question for this second move is, "What does that feeling in your body want to do?" Whatever behavior comes out, sadness, fear, anger, love, etc. the next question is asked, "who do you wish to have respond to this action?" If there is no one brought to mind the therapist can suggest a preliminary accepting figure, called the witness figure to be enrolled who will respond in a caring, accepting and defining way whatever comes out, this supplies Interaction. That figure is the first step in ego wrapping. If the client is sad, the figure can say, "I see how sad you are," Thus making the emotion conscious, named and given dimension and meaning.

That simple step can lead to expression to some extent, but then memories of suppression may surface which lead the client to have the notion that crying is ridiculous or some other such negating idea. That leads to the enrollment of figures who simply symbolize those notions and ideas and repeat back those statements. This process makes consciousness visible by having figures represent each facet of consciousness as it arises in relationship to those feelings and energies. Once those figures are externalized the client tends to associate those words and attitudes to historical figures and events of the past where those lessons about how the world reacts to their feelings were learned. This brings in the fourth question, "What does it mean?" The internalization part is attended to in making a new memory of the synthesized antidote event.

The role-players in a PS structure are called accommodators and their function is to provide the precise interactions that will satisfy the actions that well up in this possibility sphere setting by giving them the countershapes that most perfectly match the shapes coming from them. The setting is always arranged so that positive countershaping and therefore ego wrapping is constantly provided.

This sequence is understood as helping a client be in the center of their truth and then developing what is called a true scene. That is, figures are enrolled that are associated to those feelings which illustrate and illuminate how the ego views those emotions as they have been laid down in the memory. There the client is in the midst of the tension between the felt truth and the inhibiting attitudes that have historically been developed in the psychic domain in relationship with that specific form of experience and expression.

This must be a very brief description so I shall simply say that when we find those early, reality and emotion defining situations, we encourage the client to follow all the body sensations that arise during them and to follow all the ideas and comments they hear in their minds. The witness figure supports the core feelings, or the felt affect and countershapes them, and the other figures present the template and model upon which their images of themselves and the world were formed by those events.

Part of the consciousness of the client returns to the level of the age when those events took place, but another part of the consciousness is observing it from their adult place with the help of the witness figure who is an ally to their true feelings. With that combination they can redo those old events to process and express all that might have been suppressed in the original event.

But we do not stop there. We create a symbolic counter event, an antidote event, with ideal satisfying countershaping, caretaking, figures and situations involving ideal mother, ideal father, or whatever relationship that is parallel to the original relationships which stifled or did not stimulate the growth of parts of the self.

All along the way that observing, adult part of the client, in combination with the ideal figures and the consciousness and attention of the therapist is placing meaning upon all the events. Meanings that extend and expand the original ones and via the ideal event, supplement the original ones. In this way, we are making new symbolic memories to plant beside the original ones. This carries out the step of significance/internalization.

Thus while the old event is made visible where old unfinished affect and expression can finally take place, a parallel counter event takes place which would allow those developmental needs to be satisfied which might not have been satisfied in the first place.

That step is called re-mapping. The old event having given rise to an image of the world and the self that is negative and life suppressing is recorded in the memory and affects the functioning of the filters and gates now and in the future. That image is called a map, which others may call the memorized Gestalt. The new ideal image creates a new map which is laid down, so to speak, beside the old one. So that those events in the present or future that call up the old map for determining how to respond, the new map will also be called up as well which will provide alternative ways of looking at the world and reacting to the world. In other words the filters and gates will have new information by which to determine how much to allow the information from the world and the self in and the reaction of the self out.

We started this lecture with the question "What is the relationship between PS structures and the model?" The combination of possibility sphere, group support and care and the techniques lend themselves to the creation of a combined level of consciousness where the memory and affect of past conditioning events can be made alive and visible in the room. It is a kind of symbolic time machine that allows the client to visit the past, live it out fully and then provide themselves and their memory systems with a synthetic piece of memory. This synthetic memory will be laid down in the psychic domain beside the memory of the original events. This provides the client with an alternative set of "facts" to create new views and attitudes toward the outside world and of the self. Thus when new present events are met which evoke the inhibiting resulting memories of the past, the new symbolic memories created by the structure will also be evoked, because they have been placed beside the earlier ones and they too will have an effect on the filters and gates performance and selectivity. It is as if their observing ego as an adult is in an alliance with the therapist and the group to provide the child image and experience of the self this new more satisfying, more validating interaction. That makes the experience of the present difficulties appear more manageable and possible. After a structure, the unfinished feelings of the past, the symptoms, have been rescued from their hiding place in the emotions, given a place in consciousness and are no longer having the effect of static in the system. With the new map, (expanded filters and gates) new experiences become more possible and more parts of the self are expressible. Belief in the future - hope and anticipation - is enhanced.

With this I shall come to the end. I have attempted something quite complicated. I have tried to make a bridge between PS and the model. That is a tall order. I hope you have learned something about each and something about their relationship. Beyond that I hope it has brought some illumination to you that is useful in your own work.

Thank you

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