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## Minds and Brains for Gestalt Therapists<sup>1</sup>

**Key words:** procedural memory, implicit memory, psychotherapy, gestalt therapy, cognitive psychology, habituation, Rescorla-Wagner principle

**Abstract:** This article seeks to present in a brief form some of the findings in psychological research which have relevance for the practice of psychotherapy in general and Gestalt therapists specifically. Therapists often assume that if the patient has not sustained damage to the brain, all brains and related cognitive processes function similarly enough that standard therapeutic procedures are adequate to treat all or most patients. In fact the differences in processing between "normal" brains are significant enough to have a noticeable impact on the effect of psychotherapy for individuals. Both learning theory and cognitive neuroscience have in recent times provided insights that are readily applicable to understanding the psychological functioning of normal and pathological behavior as well as psychotherapeutic practice. Thus the importance of understanding procedural memory, the Rescorla-Wagner Effect, and the nature of memories produced by the patient are facilitated by understanding the outcomes of such research. Some examples are provided.

## Um in možgani za gestalt terapevte

**Ključne besede:** proceduralni spomin, implicitni spomin, psihoterapija, gestalt terapija, kognitivna psihologija, privajanje, Rescorla-Wagnerjevo načelo

**Povzetek:** Članek skuša na zgoščen način predstaviti nekatere ugotovitve psiholoških raziskav, ki so relevantne za prakticiranje psihoterapije na splošno in še posebej za gestalt terapevte. Psihoterapevti pogosto domnevajo, da, če pacient ni utrpel poškodb možganov, vsi možgani in z njimi povezani kognitivni procesi funkcionirajo dovolj podobno, da so standardne terapevtske procedure ustrezne za obravnavo vseh ali večine pacientov. V resnici pa so razlike v procesiranju med 'normalnimi' možgani dovolj pomembne, da imajo opazen vpliv na učinek psihoterapije za posameznike. Obe, tako teorija učenja kot kognitivna nevroznanost, sta prišli do uvidov, ki se jih da brez težav aplicirati na razumevanje psihološkega funkcioniranja normalnega in patološkega vedenja kot tudi psihoterapevtske prakse. Tako razumevanje rezultatov takšnega raziskovanja osvetljuje pomembnost razumevanja proceduralnega spomina, Rescorla-Wagnerjevega učinka in narave spominov, ki jih predstavlja klient. V članku so predstavljeni nekateri primeri.

## Introduction

Until quite recently psychology was a field which was made up of unrelated pockets of information that had few clear implications for each other. Clinicians were frequently heard to complain about the irrelevance of experimental psychology to their clinical work. While gossip travels with the speed of lighting, real news is very slow in circulating. Unfortunately, the same is true of science. In the last two decades there has been an explosion of clinically relevant information coming from psychological research laboratories around the world and unfortunately little of it is getting to the clinicians best equipped to use that information. Gestalt therapists have taken more than a cursory interest in the body as a whole, the person's mind, and his/her relationship to the rest of the Field, and are thus in a unique position to appreciate the importance of what has been happening in experimental laboratories and to use the information clinically.

Imagine for example being able to condition the immune system to sustain output without stimulating drugs. Or to be able to manipulate the immune system by setting mood and mental state as was recently demonstrated by Greenberg and Betancourt (1997).

In 1956 at a Symposium on Information Theory at MIT, psychologists began to entertain the idea that we could indeed see inside of the "black box". Out of that symposium grew the first

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halting attempts at research with new methodologies, not very sure footed at first and perhaps guided more by intuition than a clear vision. But they have since turned psychology into what is rapidly becoming a seamless fabric in which process, dynamics, learning, cognition, development, neurosciences and their relationship to the larger Field are really part of a larger whole. They have clearly moved the foundation of psychotherapy from an era of “dogmatics” whose god was “clinical intuition” to a far more scientific footing. In a very real way this has provided for the realization of the methodology that Fritz and Laura Perls used, as they gathered and integrated the relevant and useful ideas of their time. Indeed it was in this manner that they and coworkers such as Hefferline and Goodman created a theoretical base that to my way of thinking provides the best available general theory of psychology, but that is the subject of another paper. In this paper I would like to delineate some of the major innovations which I believe should inform and guide the present practice of Gestalt Therapy, because it is important that Gestalt Therapy not become the prisoner of 20<sup>th</sup> century thinking in the same manner that psychoanalysis became the prisoner of 19<sup>th</sup> century thinking.

## Brain Structure and Function

Let us start with the brain. We have come a long way from the days when physiological psychology meant that we knew something about the mechanisms for hunger, thirst, and sex. Unfortunately we saw very few patients coming to our offices complaining of thirst! The current understanding of neuropsychology, however, is rich and practical. Imagine if you will that we are going to take your brain, filet and butterfly it. It is now lying in your lap much as the journal that you are currently reading. The center crease represents the dividing line between the hemispheres with the bottom of the page (area closest to you) representing the occipital lobes, or visual areas of the brain, the middle of the page close to the midline representing the somatosensory cortex (the area where we sense and represent touch, pain, pressure, position, and movement), while the outer areas of the middle of the page represent the temporal or auditory lobes, and the portion closest to you knees represents the frontal lobes or the areas responsible for making intentions, plans, movements and verifying that you have done what you intended to do. So we have now a brain with areas that are responsible for vision, somatosensory information, audition, as well as planning, intending, verifying and acting.

Each of the areas of the cortex mentioned above can in turn be divided into three areas, sometimes called projection areas (think projection screen) that have roughly parallel functions regardless of the sense or lobe. These are areas for (a) receiving information from the sensing organs, (b) analyzing and storing of information related to the particular sense, and (c) integrating different senses, such as turning visual information into auditory information as you are doing as you read this. In the frontal lobes the projection is outward instead of inward. In other words the visual, somatosensory, and auditory cortex are sensory or input systems, while the frontal lobes are output systems divided into (a) raw (unorganized) motor control areas, (b) motor control and integration areas, and (c) areas that carry out the functions of presiding over the brain by intending, planning, verifying whether one has carried out the intentions.

In the same way that no two persons have similarly functioning bodies or organ systems, no two persons have similarly functioning brains. For some of us it is very easy to think in terms of metaphor, while for someone less auditorily oriented it may be easier to think in terms of movement, gesture, and other uses of space. Knowing the particular sensory strength of your client allows you to communicate in such a manner that you intervene as a therapist in a way that addresses the client's way of experiencing, whether it is spatial, auditory, or perhaps visual. I suspect that when patient and therapist work in a mismatched way that we as therapists are prone to see the patient as resistant or slow when in fact it is we as therapists who have not noticed the best way to communicate with this particular person.

I once was asked to consult on the treatment of a young man by two very dedicated analytically trained psychiatrists who had been conducting four sessions per week for about three years with no observable results. A neuropsychological assessment of the young man made it clear that his left temporal lobe was significantly compromised along with adjacent parietal areas. Needless to say a verbally based therapy heavily dependent upon metaphor and nuances of verbal imagery were very much lost on him. The recommendation was made that therapy be reoriented towards more spatial modalities which would be more attuned to his somatosensory strengths. Such technique would rely much more on very basic concrete language with an emphasis on facial expression, gestures, use of spatial metaphors, and family sculpting.

Take a moment now to look around the room you are in and notice where your eyes rest their gaze. Now notice what you “feel” as you see what you are looking at. Now you have touched on another important part of your brain, the Limbic System. Going back to our filleted and butterflyed brain, the Limbic System is located under the crease between the two sides of the journal and reaches out underneath towards the area we identified as the Temporal lobes. Remember the old often quoted studies of Olds and Milner (1954) and the pleasure centers they had identified in the brains of rats. Well here they are, understood a little better after a number of years of research. This is the area of the brain that therapists are addressing when they ask “How do you feel about that”, or “notice how you are affected by what just happened.” Here is where arousal (excitement) and positive (“I like this”) and negative (“disgusting”) rewarding systems are located. When we are trying to help clients get in “touch with their feelings” we are actually asking them to notice what they may have ceased to notice or have difficulty articulating and sharing, their reactions to what they sense, imagine, or think.

The cognitive and affective freezing that we see in patients with Post Traumatic Stress Disorder when confronted with two very unpleasant alternatives (called two way avoidance situations in lab talk) is related to the limbic system functions. This area of the brain also slows down the process of habituation or the rate at which we become calmer and less anxious or vigilant with certain stimuli. We are describing here the speeding and slowing of the therapeutic and desensitizing processes responsible for a number of the effects associated with the outcome of psychotherapy. Sleep, arousal, attack, and rage are also responses which are facilitated by the limbic system.

The brain then is like a computer that functions with a three major (audition, vision, and somatosensory information) and several minor (taste and smell, for example) operating systems or languages at once. Another way to think about it is three different interlaced computers working on the same events at any one time. All of these senses are involved to some extent in every experience. I visualize this massive information processing system like the model below (see Figure 1) with Audition, Vision, and Somatosensory information represented along three different dimensions. Virtually any cognitive process from math to swearing or avoiding a banana peel can be done by this amazing human information processing system. However, there is a fourth dimension which might be represented by the brilliance of any one point in the space delineated by the other three dimensions, and that is what we will call the visceral or affective component, the feelings we have about the math, swearing, or a banana peel, for example. Thus as Karl Pribram has said for a number of years, the brain functions like a hologram. In other words any experience or process is not located in a particular part of the brain. It is located and can be addressed or “associated” to anywhere in the system that has been affected by it.

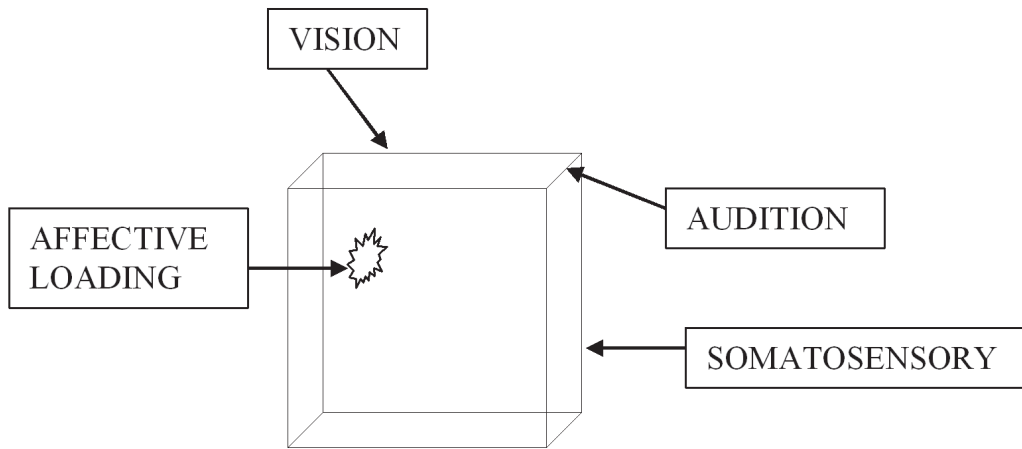


Figure 1

There is not space or time to unpack all of the possible implications for psychotherapy here, though some will become clear later, but one major shift in thinking about clients bears emphasizing. Therapists often think of and refer to thinking and feeling as different and separate functions. The research of the last few years in the neurosciences makes it clear that this concept is probably a very old carryover from Greek and early Christian philosophies which separated mind and body, and feelings and thinking. It should be clear that “cognition” and “feeling” are indeed inseparable. They are intertwined much like the strands of a rope. Although individuals may vary in their ability to articulate their experience, or their willingness to reveal their experience, their experience is accessible. Thoughts don’t occur in the brain without feelings, and feelings don’t occur without thoughts. This changes the way we go about helping people utilize and access their experience and might mean that we approach individuals whom we have seen as “unfeeling” (What a bizarre idea neurologically!) from a position that they might experience as more respectful: Truly exploring their phenomenology rather than telling them what they don’t have.

Unfortunately, there are also some myths that have been tossed about as fact not only in Gestalt Therapy but in the mental health professions in general. The most blatant is the idea that the left hemisphere is linear (often translated as less valuable), while the right hemisphere is creative and artistic. It is hard to pinpoint where that error originated but it is now part of “common knowledge”. It is possible that it came from less than careful reading of Ornstein’s (1972) *The Psychology of Consciousness* who while he reported the literature accurately perhaps made some premature interpretations. It is true that at higher levels the right and left hemispheres process information differently but those differences lie in the fact that the left hemisphere is more oriented towards auditory information while the right hemisphere is oriented towards spatial information based upon somatosensory data. The left hemisphere tends to take over tasks that are “overlearned” while the right hemisphere is oriented more towards the analysis of new and unfamiliar stimuli. Thus a skill like reading moves around in the brain depending on one’s reading skill and level. Highly theoretical math skills tend to rely heavily on the right hemisphere and creativity of course relies on the entire brain with differing emphasis depending on whether one is writing a poem or sketching a landscape.

## Current Learning Theory

You may very well remember learning theory as so boring that it dissuaded you from continuing in psychology and led you to taking the Marriage and Family Counseling route, the Masters in Social Work, or Psychiatry as a way of becoming a psychotherapist. In any case you were not deeply interested in starting a practice limited to rats and other small uninsured rodents. Learning theory is an area where some old concepts have achieved new relevance and new findings have strong implications for the way in which psychotherapy is best carried out.

Let's begin with a fairly familiar concept, habituation. Habituation means that over time and over a series of similar experiences, the strength of response to a stimulus decreases. This concept is in many ways the patron saint of the therapist who is not particularly gifted, well trained or very invested in the process but is nevertheless not hurtful or toxic to the client. Going over the same material or processes repeatedly in therapy will in and of itself inevitably lead to change in the level of emotion or perhaps even the quality of emotion aroused. Thus anxiety is lessened over time and because of repetition in contact with another. Frequently, lessened anxiety allows the client to consider alternatives of which they had no prior awareness. Probably much of the positive effect of psychotherapy that is not specific to approach or technique is due to habituation. Many behavior therapists go about using habituation in a self-conscious way and consequently may be more effective at its use in those therapeutic issues that yield more readily to habituation.

Solomon (1980) described a theory of emotion that he called Opponent-Process Theory. In a simplified form the theory goes like this. Let's call the affective response to a particular stimulus such as a very deep hurt engendered by something said to us, process A. So the A Process is the response to a stimulus. Now the A Process which has been set in motion, itself elicits a process which is a response to the deep hurt we just described. This B Process opposes the A Process. So it is in effect the opposite of the hurt just suffered. As time goes on and the hurt begins to dissipate, I start to feel relief and even good, perhaps even a slight euphoria. Now something interesting happens. The B Process is strengthened with use while the A Process is weakened. For example, if you are parachuting, then the A Process would be terror and the B Process would be exhilaration. So the more you parachute the more quickly the terror turns to exhilaration and therefore parachuting becomes more fun over time. Drug habits are thought to work under the same extremely powerful paradigm as does infatuation, if you stop and think about it. Responses to spousal abuse appear to be described quite well by the paradigm as well. If the aftereffects are so powerfully pleasant and positive, how can the victim act by leaving at that point even though she may be determined to leave at the outset? It would, and apparently does, in real life require an enormous amount of self discipline to leave after a rapprochement. Unfortunately, therapists often respond by attributing the victims' not leaving the perpetrator to fear and try to bolster self-esteem and a sense of empowerment rather than focusing on the process itself.

A very important aspect of the theory of Gestalt Therapy is the role of awareness in learning, because it describes what we observe as therapists, namely that awareness is associated with change. We are also aware that people often go through much of their lives somewhat desensitized to that which occurs. In other words the more difficult aspects of life are often lived in a somewhat dissociated manner. Rescorla and Wagner (1972) have described this process, first observed by Perls and by several generations of Gestalt Therapists, with mathematical precision. This is not the place to go into the complexities of the mathematics, but the concepts are a powerful reinforcement of the Gestalt notion of the quality of awareness as it relates to learning and change. They can also help refine the skill with which we apply the concepts in the process of psychotherapy. In formal terms the Rescorla-Wagner model says this: learning takes place best when the unconditioned stimulus is surprising and different from expectations. What we notice

or perceive depends to a large extent upon what we expect to perceive. So if what actually occurs is different from our expectations, then we tend to take notice and learn new processes. Indeed the degree of startle or surprise seems to be associated with the amount of learning or change that occurs. This is not a surprise to the experienced therapist but knowing how this occurs may help us be more pointedly effective in helping clients achieve awareness and the option of change. When a therapist is working with a client, it is important to provide an element of surprise or startle in order to help them to learn a different way of perceiving and acting. If you have watched your own work or that of another therapist noted for his or her ability to create change, you will notice that they have a way of underscoring or bringing powerfully into awareness. Perls in his time and many current noted therapists in our time exhibit the same way of bringing powerfully to attention through their response, metaphor, quality of contact, turning the spotlight back upon the client's behavior and numerous other methods of creating surprise.

Learning theory elucidates a very important dynamic that keeps many patients from being able to change. Escape avoidance paradigms of learning are uncanny in that they are almost spookily a replication of the relationship between the behavior of our clients and the rest of the Field. This paradigm works something like this. A stimulus signals that there will soon be a very unpleasant state of affairs. The person found at one time that if they responded in a particular manner, the unpleasant state of affairs could be prevented. For example the person who grows up in a home where disagreement or taking a stand always results in some kind of painful situation due to punishment, emotional berating, or simply a very painful ostracism or "silent treatment", may learn that the best way to avoid such an occurrence is to set up a confluent relationship in the moment. To such a person the payoff for confluence is avoiding the unpleasantness and pain. Now when this person has grown up and is with a new spouse, he or she may not know that disagreement or taking a stand of some kind will not elicit the hurtful situation and indeed might create a positive situation. However to change is unthinkable because every time one reestablishes confluence, one is reinforced by having staved off the expected hurtful onslaught. As we saw above, since change will occur only if there is a difference between expectancy and what we observe, no change will take place. Perls was quite prescient in his understanding of these situations which he often called "impasses". In the lab the only treatments that seem to work are: (a) forcing the person to stay in the situation without relying on their usual means of support, or (b) providing enough comfort and safety so that the person can experiment with withholding their confluence-making gestures. This sounds remarkably similar to Perls' approach of asking or preventing the person from relying on his or her usual coping style until he or she has an opportunity to observe the difference between their expectations and observations.

## **Cognitive Psychology**

Many therapists are not really aware of the truly important discoveries in this field which have in many ways accomplished what Freud wished to do with his work and dream which he titled "A Project for a Scientific Psychology". Interestingly, Fritz and Laura Perls with their uncanny ability to sniff out promising ideas from analysts (Jung, Reich), academicians (Wertheimer, Kofka, Kohler and later in life, Lewin), and philosophers (Smuts) of the time, seem now to have been very much on the right track in this regard. In fact, in many ways, the work of cognitive psychologists has been a confirmation of many of the Perls' ideas and concepts which had been based upon their less rigorous phenomenological explorations.

It is now so very clear that meaning is made by the individual organism based in part upon its own biology and in part upon its interaction with the Field. Sensation is not a report of the real world. It is impacted by the real world and what we receive are the sensations created. In a sense, sensation stands between our experience and the real world. Because of the crucial studies in signal detection during and after World War II we have known that internal states such as anxiety,

one's expectations or what one has been led to expect, and indeed the rewards for perceiving in certain ways, play a large part in our perception. Careful observation of large group process as well as of individuals confirms that understanding. We tend to perceive what we are predisposed to perceive.

Probably one of the most shaking bit of information that has emerged from the "cognitive revolution" in psychological research is how far from reality our memories can be and frequently are. For example most actual visual, auditory, and tactile memory lasts only about a quarter of a second or at the outside 4 seconds. After that we have to rely on abstraction of what we observed and reconstructions of the event based upon the abstractions. Gone is the idea that we simply have to access a stored memory. It has to be rebuilt based upon a set of abstractions! No wonder we seldom remember things the way others remember them. We not only sensed and perceived differently, we reconstruct an event based upon different abstractions. Add to the above, the effects of attention. Because of the brain's limited ability to process information we tend to attend to and store things that seem predictive and important to us and not store things that seem unimportant. Unfortunately, what may be important to me may not be important to you.

When we talk about memory we are in large part talking about what Gestalt Therapists call Ground (which consists of memory, fantasy, projections into the future, many perceptions and other material that is available to awareness but not at the moment figure). (I should say parenthetically that I am well aware that there are some Gestalt Theorists who see figure and ground as something located outside of the person and indeed the original Gestalt learning and perception theorists toyed with those concepts for a while. However, the work of Luria, (1979) Vygotsky and many others laid those notions to rest a number of decades ago, showing quite conclusively that what appeared to be figural in the Field was, in fact, a product of the individuals history and phenomenology. It is perhaps for this reason and a lack of familiarity with the history of experimental psychology that there are some who still mistakenly think of Wertheimer, Kofka, Kohler and others as Field theorists when in fact they are perceptual and learning theorists. Lewin of course did go on to develop a Field Theory of his own.)

But back to our topic, memory is at least part of what most Gestalt Therapists would regard as Ground. Tulving (1985) has come up with a way of describing various kinds of experience and memory that are extremely useful to the therapist. He identifies three kinds of memory. The first he calls Episodic Memory, which is composed of personal experience. While it is clear that this is a very important arena for therapy, it is also very tempting to spend inordinate time and effort here as if the telling and retelling of stories would do the whole of what is required of therapy. A second class of knowledge is called Semantic Memory. This is the representation of knowledge; description with words might be a good example. But Gestalt Therapists will immediately recognize the superordinate importance of Tulving's third class of memory, Procedural Memory, or the memory of how things are done. Gestalt Therapists might call this Process Memory. A simple illustration will illustrate the difference between working on Procedural or Process Memory, and Semantic Memory, or Episodic Memory. I once had a client who would not leave my office at the end of the session. Few therapists would criticize me if I dealt with this by assuming and perhaps even interpreting "fear of abandonment." I could go back over episodes in her life when she had been abandoned and bring some understanding of her feelings and the situation. Any competent analyst would probably address this and so should a Gestalt Therapist, at least that is the present conventional wisdom. I could also address this as a deficit in social skills, certainly a legitimate approach in today's therapeutic world. But now look at this from the perspective of Procedural Memory and note how much more this looks like what a Gestalt Therapist would do. From this perspective, I can look at this in terms of her "doing" and "being" in the phenomenological, existential, and neuroscience sense of the terms. She apparently doesn't know *how* to leave with something unfinished and unsettled. She can tell about what she experiences or free associate to

her Episodic Memory. But the important work here will be on *how* she does and is in this situation which in turn will help create some Procedural Memory. Most therapy is about Procedural Memory as addressed by Semantic and Episodic Memory. The important question is, is that the most direct route?

To make matters more difficult with regards to memory in general, there is good evidence that people incorporate material in reconstructed memory that may not even have originated with them. As Loftus (eg.1978) has shown in a number of studies, that a simple question about one's memory of an event in which a new variable is introduced in the question itself often causes the person to incorporate the details of the question into the memory itself. In retrospect the Gestalt Therapists stance of assuming that the memory as told by the client is real to them but may not reflect what actually happened, has been wise indeed.

One last confirmation. Collins and Loftus' (1975) Spreading Activation model of how a particular stimulus or idea organizes related concepts in the mind and the results of studies with neural imaging techniques look suspiciously like Gestalt conceptualizations of figure and ground and the manner in which they relate to each other. Both of these approaches confirm the notion of figure organizing ground while the organized ground gives meaning to what is figural.

## Conclusion

It is of course reassuring to find such a close complementarity between the theory of Gestalt Therapy and current experimental research in psychology. Perhaps that explains in part, the intuitive sense that many of us have had when comparing methods of psychotherapy that Gestalt Therapy has a complex process approach that seems to fit the clinical data that we see much more closely than do other models. It may be time to think of returning the favor in that Gestalt theory in which there is an intimate relationship between Field, Organism, and Phenomenological field may indeed have some organizing and explanatory power in general experimental psychology. □

### Notes

<sup>1</sup>This paper reprinted first appeared in the *GESTALT REVIEW* Vol 2, No2.

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