Knowledge Straight from the Field

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How is it possible that termites, blind by nature, know how to build intricate and well equipped nests, and do so unanimously and with engagement of the entire community? How can large flocks of birds or schools of fish suddenly change direction without individual animals bumping into each other? How does it happen that successive generations of lab rats learn to navigate the maze much more quickly than their ancestors? These and many other amazing puzzles have already been solved by the morphic resonance hypothesis. Man is now attempting to apply it in the domain of psychotherapy.

The patient lies on a 21st-century version of a couch. But instead of the psychoanalyst sitting at the headrest, we see a person in a white lab-coat who gazes intently at a computer screen connected to a huge CT scanner. The patient's head rests inside the machine and is currently being scanned using the fMRI method – functional magnetic resonance imaging – which means that the patient's brain activity is being mapped on a real-time basis. This is the first step of a new therapy – therapy of the future. Its goal is to diagnose disturbances of the morphogenetic field and thus determine what therapeutic measures should be used to induce the desired morphic resonance. For instance, the therapist will be able to prescribe the correct music treatment and to recommend how much music, what kind and in what social circumstances (e.g., inside a theater or at a full football stadium) should the patient be exposed to.

To bring therapy to a close, the measurement procedure will be repeated. If the therapist decides that the disturbances of the morphogenetic field have been eliminated, therapy is deemed to have been successfully completed. If, however, despite these efforts the patient's field lacks stability, the therapist may resort to additional diagnostic methods, such as computer positron emission scanning, and suggest further treatment based on its results.

Therapy based on the assumption of existence of the morphogenetic field, paired with state of the art technical achievements in brain scanning, does away with lengthy analyses of one's childhood problems, embarrassing disclosures of sexual problems, psychodynamic resistance, and every other obstacle that hinders the patient's progress on the path to regaining mental balance.

Strasbourg Experiment

The above scenes should in no way be treated as clips from a science fiction movie. They depict actual events that comprise an experimental (for the time being) research program directed by Professor Daniel Gounot from Laboratoire de Neuroimagerie in Vivo affiliated with the Strasbourg Medical School in France.

To a large extent, the program is based on the brilliant concept of the morphogenetic field announced in 1981 in the *Science* magazine by biologist Rupert Sheldrake, and inspired by reflections of Henri Bergson, a French philosopher. As a matter of fact, wishing to mention all sources of inspiration, one should also pay tribute to Carl Jung who was first to indicate the existence of collective memory and who emphasized the existence of phenomena that he named acausal synchronicity.

Jacques Lacan, an outstanding French psychoanalyst, also made a valuable contribution to the concept's application in psychotherapy. He was the first to come up with the idea of using mathematical topology in structure analysis of mental illnesses. It would not be an exaggeration to claim that Lacan, knowing nothing about present methods of brain mapping as we use them today, laid the mathematical foundations of mental illness analysis based on those methods.

According to Sheldrake's theory, the morphogenetic field is a field of unspecified physical nature filling the space, which – together with the genetic factor of DNA – gives form to living organisms. It also bears heavily on the behavior of living organisms and on their interactions with other organisms. What's more, the morphogenetic field is related to the notion of "formative causation". Sheldrake refers to it as an ability of each organism to convey a memory of frequently recurring events by recording them in the morphogenetic field. Subsequently, such information is passed down to ancestors and other living organisms through active contacts with their own fields of the same type, through morphic resonance. This happens when a critical number of representatives of a given species has learned a certain type of behavior or has acquired specific features of a given organism, which are then automatically – due to morphic resonance – much more quickly acquired by other members of the species. It is hard to explain the brisk pace of acquisition by natural learning processes alone. Intriguingly, research shows that the higher the concentration of a given population is, and – what necessarily follows – of morphogenetic fields, the more intense morphic resonance becomes.

Occurrences of morphic resonance are studied by, among others, biologists who study odd animal behaviors, including animals gathering in enormous numbers in one place without any identifiable reason, for example so-called "kitty parliaments" that consist of large group of cats living in one city who congregate in certain places. Birds hold similar “parliaments” that occur for other than migratory purposes. Animals gathering in one place do not fight or make any noises. They just spend some time together, after which they disperse. Particularly shocking are huge gatherings of snakes, with the animals crawling to one specific location year after year. According to some ethologists, the intended goal of such “get-togethers” is inducement of morphic resonance.

As a matter of fact, it is not difficult to notice a similar tendency for congregation in human behavior. This constant need to crowd in certain places, which we try to explain by such excuses as “star performance” or “sport competitions”, is as interesting as it is puzzling. How else to explain this drive to form large gatherings if it is much cheaper and more comfortable to participate in those events virtually?

Memory in the Field

The idea of morphic resonance means in practice that all living creatures owe their build and behavior to inherited memory. Due to long established patterns, morphogenesis and behavior of instinctive nature have already become habitual and can therefore be altered only in minor ways. New habit formation can be only observed in the case of new patterns of development and behavior[1].

For example, before WWII in England, blue tits (*Cyanistes caeruleus)* learned to open milk bottles with their beaks and to steal cream that was left on the doorstep. After the war, milk was no longer delivered in this way for many years. Nevertheless, when in 1952 milk bottles reappeared in front of people’s houses, the birds mastered the skill with lightening speed, despite the fact that many generations of blue tits had passed since the war. But that is not all – two years later, as late as 1955, all species of tits in Europe were able to steal cream from milk bottles. As ethologists point out, it was not possible for such a skill to spread through imitation over such a huge geographic area. According to Sheldrake, this must mean that the memory of bottle opening has survived in the morphogenetic field of the species through which it has been conveyed.

Interesting observations have been made by American cattle breeders. They would traditionally put electric fences that prevented cattle from straying and from causing damages. *Farmers from the Western states have discovered that they could save a lot of money by using fake fences – by painting stripes across the road. Fake fences worked just as well as the real ones – they made cows stop dead in their tracks at the sight of the painted obstacle... Is it possible that the young calves could have learned from older animals that is was better not to try risking confrontation with a device that might inflict severe pain? This seems rather unlikely because even those herds which had never seen real fences before now avoided the painted ones like the plague. Ted Friend from the University of Texas experimented with several hundred head of cattle and concluded that painted fences were avoided by the same percentage of animals that had never seen the fences before as by those that had faced the real, steel fences. Similar results were noted with sheep and horses. This clearly indicates the existence of morphic resonance passed down by the preceding generations, which had learned to avoid such fences themselves.*

One can multiply such examples. Laboratory experiments with rats also prove that the phenomenon is a fact. The most known case is breeding several generations of rats that have mastered a skill of escaping from a water maze. With time, rats tested in laboratories all over the world, without any experiments or training, learned the trick faster and faster.

In Place of a Grammar Gene

Keeping in mind the phenomenon of morphic resonance, it is easier to understand the complexity of learning mechanisms, particularly foreign language acquisition. Given the reserves of collective memory from which each individual draws and to which each individual contributes, it becomes simpler to learn what our ancestors have already acquired.

This conclusion coincides with observations of linguists, such as Noam Chomsky. Chomsky pointed out that small children learning foreign languages make rapid advances, which could not be attributed to simple imitation. It seemed as if children imbibed language structures with their mothers' milk. Steven Pinker, a famous evolutionist, describes many similar examples in his book <u>The Language Instinct.</u>

This is particularly apparent while creating new languages or local dialects, which in many cases happens very fast. When people of different nationalities who have no common

[1] The fragment marked in italics plagiarizes an article by Anna Opala (2007) that was published online. This fragment was added to my article by the editorial team of *Charaktery* as they reviewed my submission. All

language must communicate, they spontaneously create an improvised pidgin language that consists of single words and ungrammatical words clusters taken from different languages. Such dialects appeared frequently in colonies and among slaves, but often quickly transformed into legitimate languages. It was enough for children to be exposed to the pidgin during natural language acquisition period. Clearly, repeating illogically sequenced words was not sufficient for them any longer, therefore children systematized them into grammatical rules that had never been used before.

Evolution of sign languages was even more telling. For instance, in Nicaragua they were not used until recently because deaf people had been isolated. The first schools for the hearing-impaired were established by the Sandinistas, when they came to power in 1979. According to Pinker, however, students in those schools were mainly taught lip-reading and normal speech which did not produce any satisfactory results. Most importantly, however, children saw each other on school buses and out playing, and communicated by means of signs that they also used at home to communicate with their parents. Out of these signs, they created their own communication system, which soon became the official sign language presently known as the LSN – Lenguaje de Signos Nicaraguense (Nicaraguan Sign Language). It is still used by the hearing-impaired people who started learning at the age of ten or later. In contrast, deaf children who have been receiving language instruction since the age of four have developed the improved version of that language, with a richer vocabulary and a more systematized grammar. To differentiate between the two versions, the new variant was called Idioma de Signos Nicaraguenses (ISN), which, as Pinker stated, emerged "literally before our very eyes".

Both Chomsky and Pinker assume that language skills are passed down as information coded in the gene material which pertains to all languages. This should explain why small children from any given ethnic group are able to learn any given language. The morphic resonance theory provides an even simpler interpretation of that phenomenon. According to this theory, small children attune their speech not only to the people in their direct environment, but also to the millions of past users of that particular language, which means that morphic resonance enables children to acquire the language, as well as to learn anything else. In the same manner, a deaf person learns sign language from the inherited memory of other deaf people from the past. There are no genes determining the ability to learn specific languages, neither spoken nor signed.

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Obviously, interpretation of language acquisition in terms of formative causation is controversial, as is the theory of genetic origin of universal information related to all languages. After all, as Pinker points out, "no one has yet located the grammar gene".

Brain Tuning

Years passed before Sheldrake's theory, at first highly criticized, actually gained acceptance. The green light was given by research discoveries made by Professor Louis Cozolino from Pepperdine University in Malibu. He demonstrated links between this therapeutic method and brain structure in a clear and accessible manner, and proved that all forms of psychotherapy, from psychoanalysis to behavioral interventions, are effective as long as they strengthen changes in the essential neural pathways.

However, a major turning point in the studies of morphic resonance came with the discovery that it was possible to measure morphogenetic fields with the use of modern methods of brain mapping. How was that achieved?

As it is often the case with great discoveries, it all happened by chance. While conducting research on brain mapping with his team, aforementioned Professor Daniel Gounot grew suspicious that the presence of the person running the test had a certain negative impact on the variance of obtained results. He decided to check his conjectures on an experimental basis. As it soon turned out, even seemingly insignificant parameters are important - for example, the distance between the person running the test and the subject. Isolating the patient in a separate room always produced results of much lower variance, which directly suggested some kind of influence of one brain on the other. This was not an entirely new observation - research on synchronization of brains of two persons having a conversation had long been known. Brain synchronization was measured by the means of EEG, but apart from the phenomenon being confirmed, the discovery was not used in any way. In addition, in this case the communication process also took place. In Gounot's test the mere presence of other people resulted in changes in the subjects' brains, which is why he had to move a few steps further. He started to test two and more subjects at the same time. What he was observing were systems (maps) of brain activity that influenced the other subjects, creating a catalogue of specific systems of brain activity which caused the "tuning " of the other brain. The search for the mechanism behind these phenomena led to the concept of morphogenetic fields and morphic resonance, which represented an ideal explanation of the examined regularities. The condition of the brain that is capable of tuning in to other brains,

recorded in the form of an activity map, is an indicator of the morphogenetic field at work. This is how – from of a vague and strongly criticized philosophical notion – morphic resonance has transformed into a hard, by all means useful reality visible on a computer screen.

With Wagner Against Phobia

How can this approach be applied to psychotherapy? First of all, diagnostic analysis of morphogenetic fields aimed at a therapeutic intervention assumes that some of them, particularly those needing therapy, came into existence in isolation from the influence of the fields of experience of those individuals who had adjusted to the environment more efficiently. Take a very simple example: when they see a therapist, many people raise the issue of their inability to adapt to a competitive environment, failure to demonstrate assertive behaviors, their shyness in establishing relationships, etc. According to the morphic paradigm, one may hypothesize that those people have not had any opportunity in their lives to experience morphic resonance with individuals for whom such skills and experiences are part of everyday life. This is where problems in developing competences in the aforementioned areas stem from. The field is diagnosed by comparing the activity map of a person who has strongly established patterns of such behaviors, one whose habits allow us to expect that morphic resonance can be induced in a person who faces problems in this area. The analysis of differences conducted by the Strasbourg research team suggests numerous aspects of problematic behavior that may be solved by resonance-based therapy. Instead of lengthy psychoanalytic sessions, or ineffective assertiveness training sessions, the morphic approach proposes simply being in the environment that ensures dense morphogenetic fields of people who possess such desired qualities – one needs look no farther than the fan-packed stadium mentioned earlier, though it may seem like an oversimplified example. If you add sessions of music therapy in which works by Wagner will play a fundamental role, chances are that after a number of sessions the morphogenetic field will change. The only thing left to do is to take hard measurements to check it.

Obviously, at this stage of research we are only able to diagnose and handle simple maladjustments and phobias. Besides, it would be unethical to use morphic resonance in patients suffering from psychoses or other serious disorders when we do not know yet the entire potential of the method and the consequences of inducing morphic resonance. Moreover, diagnosis applies only to a small part of the fields. The entire image will be

eventually composed of tens or even hundreds of specific systems of brain activity. Undoubtedly, for the purpose of comprehensive analysis, we will need complex computer software to search those hundreds of images at high speed for subtle differences. Today we are not yet able to define precisely the entire area of the morphogenetic field, since its characteristics bear all the hallmarks of a quantum field and, likewise, escape any attempts to examine and describe it thoroughly. Nevertheless, as it appears from our present knowledge, the resonance method offers excellent opportunities for psychotherapy.

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Experiments with Morphic Fields

The simplest way to directly prove the existence of morphic fields is to work with a group of organisms. Individual organisms may be separated in such a way that they cannot reach one another through the senses which are known to us. If, despite the separation, information is transmitted among individuals, this presents evidence for the existence of connections related to morphic field.

It is known, for instance, that blind termites start to build the nest at different sides to meet in the middle with amazing accuracy. They can do so even when a piece of odor-proof glass is placed in the middle of the nest.

Migration is an equally mysterious phenomenon. As one of tropical entomologist says - neither hunger, thirst nor invasion by natural enemies can explain why clouds of locusts unexpectedly soar up into the air and move to another place. As Professor Remy Chauvin comments on the issue of sudden migrations of huge flocks, migrations occur clearly against the instinct of species preservation, and they frequently lead to mass extinction of the animals. It seems as though the animals were thrown into a frenzy, one so contagious that it makes representatives of other species follow the migrating animals.

As a rule, scientists studying phenomena of that kind are unable to find explanations for them. Why do herds of African gazelles all of a sudden and for no apparent reason leave magnificent grazing lands and head for a desert to starve to death there? Are these “telepathic” behaviors also responsible for the phenomenon of “the collective mind” of some insects?

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Sheldrake's Fields Versus Quantum Physics

Critics of Sheldrake's theory ask about carriers of this field. But it seems to be a risky question, since it may undermine the existence of many other physical notions, accepted today without reservations. Let's focus for a moment on, say, gravitational fields. Nobody has ever found gravitons that would act as carriers of the field, and still we do not throw doubt on the existence of the gravitational field. Gravitational or electromagnetic fields are detected only by their effects, so in order to explain these effects notions of the fields have been created. There are many more problems with the quantum field. When a quantum field embraces a particle, it influences it in such a way that behaviors at quantum level are very subtle and have nothing to do with mechanics. The wave acts here as information. As we know, instead of any combination of components, spins of two different, not interrelated particles are always counter-directed. To speak more vividly: since every particle must have a property in opposition to the other, if we see that one is "black", the other must be "white". All this takes place on a concurrent basis, without any signals being exchanged. Measurement of polarization of one of the particles immediately provides us with information concerning the other, its twin. It is identical, except for the opposite sign. This odd and inexplicable phenomenon was called "quantum entanglement", and Einstein even pointed it out as "spooky action at a distance". According to de Broglie, what we call an atom is organized by a higher, or quantum field of information. This field gives the atom its characteristics. The quantum field contains information on the entire environment and the past, all information that governs the electron's present activity. The organizational field is everywhere. Quantum mechanics knows fields of information in the wave function and, quite likely, also super-quantum fields that govern the quanta fields themselves.

The morphogenetic fields act similarly by organizing the behavior of biological units. On the one hand, they are equipped with genetic action programs, but the shape of organisms, pace of acquisition of habits and skills, as well as communication are influenced by information transmitted by that field.