

Running head: PSYCHOLOGICAL SOKAL-STYLE HOAX

Psychological Sokal-Style Hoax

Tomasz Witkowski

Not affiliated

Author's Note

Tomasz Witkowski, Wrocław, Poland

Correspondence concerning this article should be addressed to Tomasz Witkowski,  
Taszków 10, PL 57-343 Lewin Klodzki, Poland. E-mail: [witkowski@moderator.wroc.pl](mailto:witkowski@moderator.wroc.pl)

### Abstract

The article is an account of a hoax perpetrated by the author, which led to the publication of a paper that introduced an invented therapy in the popular science journal *Charaktery*. The hoax, partly based on a similar provocation undertaken by Alan Sokal in 1996, was designed to test the viability of introducing a scientifically undemonstrated concept into popular science. Its other aim was to provoke public discussion on the subject of pseudoscience invading the domain of science. This article presents the history of the paper's publication and describes its contents. Its author analyzes the consequences of publishing pseudoscience content in popular science journals that deal with mental health practices.

**Key words:** popular science, pseudoscience, psychotherapy, Sokal hoax

In 1996 Alan Sokal, a physicist from New York University, published a paper in *Social Text* – an influential academic journal of social sciences – entitled *Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity* (Sokal, 1996). Soon thereafter, Sokal revealed that the article constituted nothing more than a prank – a parody of works published by the journal. The article was larded with nonsensical yet authentic quotations from renowned French and American intellectuals, and disclosed how these thinkers had misused notions from quantum physics and mathematics. The author showed that such postmodern thinkers as Lacan, Kristeva, Irigaray, Baudrillard and Deluze had repeatedly juggled with these concepts without understanding them. Sokal’s other goal was to satirize cognitive relativism by demonstrating how groundless the ostensible proofs invoked by the aforementioned authors had been. Sokal’s parody ridiculed certain tendencies in intellectuals who attempt to sound very “deep” but who discuss concepts that they do not always comprehend. To clarify the motives behind the parody and its consequences, Alan Sokal and Jean Bricmont wrote a book entitled *Intellectual impostures*, which detailed the parody –in literature referred to as the Sokal hoax – paragraph by paragraph (Sokal, Bricmont, 1998).

Does this mean that social scientists have abandoned their habit of forging links with quantum physics and mathematics in their theories, links they do not fully understand? Can we still take Lacanian mathematical topology seriously, more than ten years after the sensational Sokal hoax has put it into question? Are psychologists still using quantum physics analogies to dazzle readers with the depth of their brilliance? Unfortunately, my experiences in the field of psychology, and particularly observations of therapeutic methods and the manner in which they are theoretically justified and promoted, suggest that psychology practitioners have not learned much from Sokal’s lesson. What is worse, they also do not

hesitate to exercise the aforementioned methods in a particularly sensitive sphere, that of therapeutic practice. Moreover, one might suggest that editors of some popular science journals contribute to these questionable efforts by publishing texts of doubtful quality. I decided to test my observations in an “experiment” equally unorthodox as the one performed by Sokal, though with a different set of goals in mind.

In October 2007, I managed to publish an article dedicated to a new type of psychotherapy (Aulagnier, 2007), which appeared in the popular science journal *Charaktery* under the title “Wiedza prosto z pola” (“Knowledge straight from the field”). My article contained nothing but falsehoods and fantasies with no scientific basis whatsoever, and included plagiarized passages added by the editors themselves. I am the author of the article and it was written under the pseudonym “Renata Aulagnier.”

Why did I decide to invent a new therapy? People who encounter personal problems or who deal with health issues often desperately seek help of a therapist or a psychologist. Reaching for this type of assistance is often not easy. One must overcome the natural resistance to reveal one’s shortcomings to others, and face the possibility of a painful disclosure of personal problems in the presence of a therapist or a group (in the case of group therapy).

Therefore, before deciding to adopt such a solution, many people try to handle their problems on their own. The range of self-help options available today has expanded immensely. Bookshops offer long rows of guidebooks that entice the reader with the promise of solving all types of crises and comprehensive life transformations. Journals propagating health awareness and popularizing psychology present yet another source of information on the quality of specific therapies. Moreover, one click of the mouse brings a blinding array of Internet-based interventions. How to choose the right one? Is it by following temptations that

sound like promises? Or by making more rational decisions, and seeking the scientific underpinnings of particular therapeutic systems? There is much at stake in this process. At best, a bad choice may mean a loss of time and money; at worst, it may involve the deepening of a crisis or serious psychological problems, or perhaps bring along more serious life complications. In the most pessimistic scenario, bad therapy may result in suicide or even inadvertent murder (e.g., Mercer, Sarner & Rosa, 2003). Under such circumstances, how can people be expected to make wise choices?

At present, the European Association for Psychotherapy (EAP), which represents more than 120 thousand psychotherapists, has registered 31 therapeutic modalities. New modalities are added to the list on an ongoing basis. A considerable number of these therapies do not have any verified scientific underpinnings (e.g. neurolinguistic programming, attachment therapy). Apart from the lists of modalities compiled by such associations, there are many more pseudo-therapies developing within the market of psychotherapeutic services. In 1959, Robert A. Harper identified 36 different therapies (Harper, 1959); in 1981, Corsini counted over 250 (Corsini, 1981), and Goleman (1986) placed the number at more than 460. Today, this number is certainly higher.

Whether they will survive and be put on respectable lists is in large part determined by the silent approval of the academic world and the level of interest among licensed psychologists. If a potentially harmful therapy wins such support and is henceforth put into practice, it is only a matter of time before it seduces many desperate patients. I invented my own therapy primarily to ascertain to what degree popular science journals – at least one prominent journal in Poland - protect their readers against such threats. In addition, I intended to provoke a broad discussion on how pseudoscience and parascience permeate universities,

the academic community and scientific institutions, and are further circulated through the press and specialist journals.

Why did I choose *Charaktery* (<http://www.charaktery.eu>)? Primarily because this monthly magazine, dedicated entirely to psychology, boasts a professional advisory team, which at the time the article was under review was composed of eight experts with professorial titles and one Ph.D. Its editorial board included four doctors, one of whom had another advanced graduate degree. These facts, strengthened by the editors' declarations emphasizing that the monthly is a popular science magazine, may lead its readers to conclude that the content presented to them in the journal is valid, verified, and supported by solid scientific research.

Nevertheless, after a thorough analysis of the journal's content, I drew opposite conclusions. In recent years – in particular, those few that preceded my hoax – apart from a range of credible articles, the monthly has published highly questionable content that sells just as easily as science. *Charaktery* has popularized neurolinguistic programming (e.g. Peczeko, 2006), Bert Hellinger's family constellations therapy (e.g. Fajkowska-Stanik, 2005; Gumowski, 2004; Parzuchowski, Wilkirski, 2004), Carl Simonton's cancer healing (e.g. Gumowski, Koźmińska-Kiniorska, 2006) and many more treatments of questionable (at best) scientific credibility.

Another argument that supported my choice of *Charaktery* was the fact that the journal reaches a very specific and wide (over 50,000) audience. It includes psychologists (for many of whom the journal is the key source of information), students of psychology, and therapists with little or no educational background in psychology. This target group is also composed of numerous former, present, and prospective patients – individuals who frequently discontinue their pharmacological treatments once they start psychotherapy. It is therefore difficult to

imagine a better carrier for therapeutic news in Poland than *Charaktery. American Scientific Mind*

(<http://www.scientificamerican.com/sciammind>/<http://www.scientificamerican.com/sciammind>)

d/) could be taken as its rough American equivalent, in particular taking into account that since April 2010 the editors of *Charaktery* are also the editors of the Polish version of German magazine *Gehirn & Geist* and *American Scientific Mind* (<http://psychologiadzis.eu>).

I will quote below select passages from the text. For the sake of clarity, I will pair them with narrative comments to highlight the absurdity of my claims, as well as their random and pseudoscientific character.

#### **Knowledge Straight from the Field**

**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 21<sup>st</sup>-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.

I deliberately included this ridiculous statement that if the therapy yields no results, the therapist should consider additional diagnostic tools. Presumably, the expression "computer positron emission scanning" sounded scientific enough for the editors to justify its usage in the text.

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.

The Laboratory to which I am referring is in fact located in Strasbourg, and Daniel Gounot conducts his research there. His research does involve brain mapping but has nothing in common with the proposed therapeutic method, and by no means with morphogenetic field therapy! Some of Gounot's articles are publicly available online in English. An hour of net

surfing is more than sufficient to obtain a general idea of who he is and what he does. He had been notified by me about the hoax before the article went to press.

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.

The factual data related to the concept are true (Sheldrake, 1981), except for the statement that the concept itself is brilliant. Typing the expression “morphogenetic fields” into any Internet browser yields several hundred search results, with an overwhelming majority of links leading to Web-sites related to paranormal events or bizarre therapies, such as Bert Hellinger’s family constellations therapy (Ulsamer, 2001). Had the editorial team bothered to check relevant information, even on Wikipedia, they would have quickly obtained enough to form an opinion of the concept. They could have found out, for instance, that neither biologists nor physicists treat the concept seriously, rejecting it as at odds with scientific evidence. They could have also had an opportunity to learn that the concept was being developed mainly by science-fiction writers.

In the subsequent part of the article I stated:

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.

Apart from the fact that Jacques Lacan was French, worked as a psychoanalyst, and wrote on the link between mental illness and mathematical topology, all the rest is rubbish. Lacan did not lay any mathematical foundation for the analysis of mental conditions, let alone those based on brain mapping. I invoked his name with the assumption that there are certain names in social sciences, including his, which should immediately ring a bell in the mind of a well-read intellectual. The psychoanalyst, together with such figures of postmodernism as Julia Kristeva, Luce Irigaray, and Jean Baudrillard, was largely ridiculed as a result of the Sokal hoax (Sokal, 1996, Sokal & Bricmont, 1998). Surprisingly, this bait left deliberately in the text apparently did not catch the attention of its editorial team.

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.

Contrary to the claims of this passage, no researchers have confirmed either the existence of morphogenetic fields or morphic resonance. At the time I was engineering my

hoax, searching the EBSCO scientific database for such keyword as *formative causation*, *morphic fields*, *morphogenetic fields* resulted in only ten publications related to the topic, including the book by Sheldrake himself, a review of it, a highly critical write-up of his concept, and no more than two studies that obtained disappointing results with reference to the quicker pace of the learning process when in the company of others.

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?

The concept's proponents do refer to such phenomena; nonetheless, the arguments related to human behavior were invented by me, and I am not aware of anyone who mentions them elsewhere.

### **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.*

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 subsequent citations in italics indicate similar plagiarisms as well.

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.

The above fragment seemed enigmatic enough to the editors that they asked me for additional information – what tit species that was, when (date) and where (the country) the described events had taken place. Their diligence was only perfunctory; it was easy to invent everything, and the mere act of filling in details was enough to make the text credible. The fragment I quoted above was in fact something I remembered from literature whose origin and purpose I can no longer recall.

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 it 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 *The Language Instinct*.*

*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 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.*

*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”.*

These paragraphs were plagiarized as well. I wonder – how would a linguist comment on this fragment?

### **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.

I have randomly combined Louis Cozolino, Sheldrake’s theory, and the entire story invented by myself. I have not even touched Cozolino’s book (Cozolino, 2002) to remain in conformity with the principle I followed while writing the text – to use the most superficial knowledge possible. What I wrote in the article was taken from a review of the book available online. As it turned out again, it was possible to make total nonsense credible by supporting it with a name, a university, and references to research and brain structure.

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 a vague and strongly criticized philosophical notion - morphic resonance has transformed into a hard, by all means useful reality visible on a computer screen.

This entire quote is a figment of my imagination. The editors did not ask me for the source.

### **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.

As fragment before – utter fantasy with no scientific basis.

TEXT IN A FRAME NEXT TO THE MAIN TEXT

### **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?

The phenomena I was writing about, which are also quoted by the followers of resonance field therapy, have been already sufficiently explained within the currently accepted paradigm in ethology. Even if some aspects remain an unsolved mystery, they may not be treated as evidence for the existence of morphogenetic fields.

Information on the link between the quantum field theory and the morphogenetic field was included in the text during early stages of editing. Again, it was plagiarized as well. This

time, however, the passage was enigmatic and unclear enough to make the editor, who was working with me on revising the article, ask me to either present the analogy in a more accessible manner or delete it altogether. Because the quantum field analogy is likely to be the most serious theoretical abuse in Sheldrake's theory, I wondered whether I would be successful in attempting to publish that nonsense as well. I was.

TEXT IN A FRAME NEXT TO THE MAIN TEXT

### **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.

The analogies to quantum physics included in the text were meant to be my own deliberate tribute to Sokal.

While still waiting for the text to be published, I decided to write another article as a continuation of the first one. It found favor with the editorial team, who sent comments on how to correct the text, which I did accordingly. The new article explained the phenomena of empathy, altruism, de-individuation, Werther effect, mysterious animal suicides, missing elements in the concept of mimetics, as well as the phenomenon of *psi*. Only the latter met with the editors' determined resistance, although in that case I invoked a rather widely known article (Bem & Honorton, 1994) published in *Psychological Bulletin* – one of the most prestigious psychological journals. Still in the process of writing, I came to the conclusion that I could explain anew, in a convincing manner, numerous more or less obvious psychological phenomena referring to the notions of morphic resonance and morphogenetic fields. All the same, since in my view I had sufficiently confirmed my hypotheses, I decided not to delay revealing my hoax until the publication of the second article. Extending the hoax would not contribute anything more relevant except for increasing the quantity of data that corroborated my hypothesis concerning the lax scientific standards of the magazine. I also concluded that I could not allow for the further deception of readers.

Having revealed my hoax, I offered assistance to the editorial team in preparation of the content-related disclaimer that, in accordance with Polish law, should have been published. The editors refused to cooperate and they have not published such a disclaimer to date. Only a letter from the editor-in-chief was published in the subsequent issue, in which he explained that the editors had been deceived by me and, at the same time, he passed moral judgment. The plagiarism allowed by the editorial team in the text were called “an obvious technical mistake.”

### **Discussion**

#### ***Sokal hoax vs. Renata Aulagnier***

The day that I revealed my hoax, it was immediately of interest to the academic community, and was compared with the Sokal hoax. That is why I deem it sensible to explain the differences in the goals that I had set for myself while preparing the hoax. I did not see Sokal’s parody as an example to emulate. It became only a source of inspiration for my plans. I do not have sufficient knowledge to expose serious abuses of quantum physics or higher mathematics. Nor had I intended to take a stance on postmodern philosophy. Furthermore, I did not – and do not – see any point in repeating what Sokal had done. In my view, he demonstrated unequivocally what he had planned to show. My reference to quantum physics and mathematical topology was only of a symbolic nature, as a mark of recognition for Sokal.

Many criticized me for choosing a popular science journal – contrary to Sokal. They claimed that misleading the editors of a scientific journal would have been much more challenging – and convincing. Again, this was a deliberate choice – my aim was to show how pseudoscience found its way to the public. In psychology, both pseudoscience and

parascience are rarely spread through the formal scientific press, nor are pseudotherapies or charlatanry. They come into existence largely in books, how-to guides, and popular psychology or popular science magazines. Most frequently, they imitate science or function at the edges of the scientific mainstream.

To analyze the potential impact of my article published in *Charaktery*, I conducted brief tests among 172 persons who had never heard about the hoax (Witkowski & Fortuna, 2008). After reading the paper, they were asked to answer a range of survey questions. Most interesting was the analysis of readers' responses to the paper. Nearly 77% of the readers would recommend the article to friends. Moreover, 72.5 % expressed their interest in broadening their knowledge regarding the therapy in question. Almost half the readers would enroll in a course on that type of therapy (42.9%). Nearly two out of three persons (61%) would recommend the therapy to a person who is struggling with psychological problems. Based on these outcomes, we can conclude that the text itself was characterized by a high persuasion potential.

The publication of one article and the acceptance of a second article by a widely read journal with a respectable scientific title suggested that I could easily circulate this knowledge with impunity. What is more, I could even advertise my therapy in the journal, and, consequently, also conduct therapy. The latter, however, would go beyond intellectual provocation. Presumably, there is no scientific journal that would offer such opportunities for promoting new therapies. Reports on the empirically supported therapies regularly published by scientific journals (Task Force on Promotion and Dissemination of Psychological Interventions. Division of Clinical Psychology, 1995; Chambless, Baker, Baucom et al. 1998; Reisner, 2005; Sanderson, & Woody, 1995) have not necessarily resulted in a rapid growth in

the number of people conducting such therapies. Misleading the editorial team of a scientific journal could therefore be a means of achieving goals as established by Sokal or others.

While preparing the hoax, I placed an emphasis on exposing problems related to propagating pseudoscientific content in circles beyond the scientists themselves, i.e. students as well as present and prospective clients for psychological services available on the free market. I believe that my hoax and its revelation were simple and clear enough to reach this group. Scientific press does not enable such opportunities. To explain fully (and only to well educated readers) the meaning of what he had done, Alan Sokal wrote a whole book on his hoax.

### **Ethical issues related to the hoax**

Hoaxes, mystifications, and provocations have always raised doubts of an ethical nature. Critics of my undertaking have repeatedly put forward such accusations. Among them there were some who stated that sending the article to the editors was nothing more than wasting their time, abusing their trust, misleading the readers, and so on. These accusations are worth analyzing in terms of the specific status achieved by popular science press. It enjoys the privileges and recognition that are due to scientific journals, at the same time taking little responsibility for the published content. In scientific journals many people (editors, reviewers, readers) monitor each publication. Even if a worthless or dishonest article has gone to press, sooner or later it will be detected by the scientific community, as exemplified by some of the publications of Cyril Burt (Gieryn & Figert, 1986). Journals that do not see maintaining the quality of content as their prime concern quickly lose their impact factor, and what follows - their position.

The situation looks substantially different in the case of popular science journals. Their position, in the majority of cases, is closely related to their market potential – and the latter is determined by readers and advertisers. Editors select texts in such a way so as to increase the number of readers and - by doing so - to maximize their advertising income. Publishing unverified content may, at worst, lead to losing the best educated and more demanding readers, but those unfortunately belong to a minority. There is no specific scope of responsibility to be taken by members of academic boards and editorial teams of popular science journals. There is likewise no mechanism intended to verify their scientific value. In my view, this poses a considerable threat to readers of such magazines, in particular those devoted to health issues. In the case of the popular science press, this threat is even more serious because it reaches readers who are not sufficiently knowledgeable to verify the content offered to them. A journal about mental health practices, in which specialists in neuro-linguistic programming and other pseudotherapies advertise, is unlikely to print articles criticizing such services.

Accusations of an ethical nature aimed at my hoax would have been applicable had I perpetrated it on the editors of a scientific journal. Readers of scientific journals are generally skeptical about papers published therein. In addition, they typically possess knowledge and competence sufficient for recognizing scientific inaccuracy or, even more important, blatant falsehoods. Editors of a scientific journal are primarily in charge of the scientific and methodological quality of printed articles. Editors of a popular science journal, in particular on mental health practices, are responsible for the welfare of their readers. Hence, as a reader of this type of press, I believe I have every right to expect the editors to protect me from harmful recommendations, false statements, and misinformation.

### Conclusions

I would not like the conclusion drawn from my hoax to be limited to a simple statement that “anyone can be cheated.” As I have demonstrated above, the text was far from sophisticated, it offered clear hints that allowed its demystification, and I used superficial knowledge. It would therefore be more accurate to say that “it is unusually easy to cheat the editors of at least one popular science journal.” And yet, this conclusion does not contain everything that my hoax has exposed. Instead of protecting the credibility of published articles, the editorial team of *Charaktery* took an active role in deceiving themselves and readers.

It would also be an erroneous generalization to claim that the editors of *Charaktery* deceive its readers by publishing nonsensical texts and plagiarisms. My hoax provides no grounds for such reasoning, as this magazine publishes a number of valuable articles. What should be concluded instead is that it may sometimes be extremely easy to sneak a pseudoscientific concept into popular science, and that editors may be ready to collaborate if this happens to coincide with the market goals of the magazine. If, instead of the author who had planned to reveal the hoax from the very beginning, there was a fraudulent scientist or pseudoscientist with a strong belief in his own arguments, access to readers would be wide open to them.

My hoax has revealed a range of questions of a more general nature related to science, especially concerning how it is popularized and the responsibility of psychologists for their activities within the field of mental health practices. The quest for answers in the wake of the revelation of my hoax was conducted in a number of public discussions held in Poland, primarily by scientists. The most intense discussion was published in a separate issue of one

of the most influential scientific psychological journals, *Psychologia Społeczna* (Lewicka & Śpiewak, 2008), devoted entirely to threats revealed by the hoax.

A complete list of issues raised by the hoax is too long to discuss separately.

Nevertheless, the most important are undoubtedly worth discussing. Are representatives of scientific psychology responsible for how it is popularized and what type of knowledge is popularized? What is the difference between the tolerance of editors, therapists, and scientists for various forms of practicing science and conducting therapy, and the indifference to abuses in this sphere? Should we, as psychologists, abandon the market of psychological services, often referred to as psycho-business, to the rules of the free market? How much nonsense published in popular science and scientific magazines remains forever hidden, begin to live a life of its own, and exerts influence on people struggling with mental or health problems? I hope that my hoax will stimulate discussion concerning these important and troubling questions.

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