

## THE SCIENTIFIC IMBROGLIO OF PSYCHOTHERAPY: A WAY OUT

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*Se introduce la noción de embrollo como instrumento crítico. Si por un lado sirve para la identificación de un estado confuso de las cosas, por otro invita a su clarificación y salida. Dos embrollos se identifican en la psicoterapia. El primero es el enigma de cómo diferentes psicoterapias tienen, sin embargo, una eficacia similar. Se aclara de acuerdo con tres niveles de análisis: ontológico (distinguiendo entidades naturales versus interactivas), antropológico (factores comunes de las psicoterapias) y psicológico (ciertos efectos sanadores inherentes a toda práctica curativa). El segundo es el problema de la demarcación entre ciencia y pseudociencia. Siendo importante, el problema de la demarcación encubre otros problemas todavía más importantes que tienen que ver con la concepción de ciencia al uso. Porque la demarcación es subsidiaria de una concepción positivista de ciencia, ella misma problemática cuando se aplica en clínica. Estos otros problemas se han identificado como mala ciencia, cientificismo e integracionismo. Aun cuando estos embrollos se han clarificado, la salida pasa por plantear la cuestión ontológica de base acerca de qué es un trastorno psicológico, sin asumir la concepción estándar como «avería» en mecanismos internos. Se elabora una idea de trastorno que tiene su base en los problemas de la vida.*

**Palabra clave:** Veredicto del pájaro Dodo, Problema de la demarcación, Pseudociencia, Mala ciencia, Cientificismo, Integracionismo, Situación-límite, Hiperreflexividad.

*The notion of the imbroglío is introduced as a critical instrument. If on the one hand it serves to identify a confused state of affairs, on the other it invites its clarification and exit. Two imbroglíos are identified in psychotherapy. The first is the puzzle of how different psychotherapies, surprisingly, have similar efficacy. This is clarified according to three levels of analysis: ontological (distinguishing natural versus interactive entities), anthropological (common factors of psychotherapies), and psychological (certain healing effects inherent in all healing practices). The second imbroglío is the problem of the demarcation between science and pseudoscience. While important, the problem of demarcation conceals other even more important problems that have to do with the current conception of science. This is because the demarcation is subsidiary to a positivist conception of science, itself problematic when applied in the clinic. These other problems have been identified as bad science, scientism, and integrationism. Even when these imbroglíos have been clarified, the way out is to pose the basic ontological question about what is a psychological disorder, without assuming the standard conception as a «failure» in internal mechanisms. An idea of the disorder is raised that is based on life's problems.*

**Key words:** Dodo bird verdict, Demarcation problem, Pseudoscience, Bad science, Scientism, Integrationism, Limit situation, hyperreflexivity.

**I** take the notion of the imbroglío inspired by Gustavo Bueno's use of it in his lessons from 2013 in *El reino del hombre y el hombre histórico* [The Kingdom of Man and the Historical Man] to refer to a confusing accumulation of things that separately seem clear. Bueno retrieves the term previously used by Benito Feijóo (1676-1764), after whom the square was named where the Faculty of Psychology of the University of Oviedo is located, in the expression «Pythagorean imbroglío, more impenetrable than the Cretan Labyrinth». This seems to me to be the case of psychotherapy. The recognition of the

imbroglío forces us to consider the exit from the labyrinth.

The imbroglío of psychotherapy jumps out at you from several sides. If a user searches the internet, he or she will find a tidal wave of psychotherapies, making it difficult to see, in the end, which is the best and most convenient. The Internet is today, as Bueno says, the biggest imbroglío. From a psychology student's perspective, the experience may be similar. Assuming that the different existing psychotherapies are explained to them (perhaps the best assumption), each one will seem complete and self-sufficient to them. If only one psychotherapy has been explained to them, often in opposition to the others, when they finish—or perhaps sooner—and take a look at the bulletin board of their Faculty and of course the Internet, a world of other therapies begins to appear. If the student has been «engraved» with the psychotherapy that has been explained to them, perhaps they

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will hold on to it more and a division between us/them will begin to occur. If not, they may search and search and perhaps have some epiphany and may be «engraved» later on. Or they may keep looking. It is not known which is worse: whether to be «engraved» or to drift.

If you are a psychotherapy researcher, probably with the «golden method» of clinical research, typically the randomized controlled trial (RCT) and meta-analysis, this can happen. On the one hand, the method itself will reveal a variety of effective psychotherapies. On the other hand, the same method leaves out another variety of psychotherapies that really exist, which are neither ineffective nor stupid. Here it is not clear whether we should say it is worse for the psychotherapies or worse for the method. Being even more scientific, the next step would be to differentiate between science and pseudoscience. However, there are no strict criteria. The aforementioned golden method is blind with regard to explaining how and why the therapies are effective. It may be the case that an effective therapy, with all the blessings of RTC and meta-analysis, seems pseudoscientific because of the implausibility of its operation in light of other established therapies. A war of the pseudosciences has broken out in recent times.

So this is the imbroglío that users, students, and researchers can find themselves in. On the one hand, a variety of reasonably effective psychotherapies, each one complete so if the others did not exist, they would not be missed. On the other hand, the lack of clear and distinct criteria for the demarcation between science and pseudoscience with the so-called «golden method» not serving.

First of all, I am going to tackle both of these imbroglíos—actually they are the same one—to clear the ground and make way for an exit. Needless to say, my approach is not from anywhere, from God’s perspective or something like that, but from the ground, however it is not without a compass and coordinates. Nor is it without seeing the terrain from the outside, at map level, avoiding getting bogged down in a patch of land. It will be a very particular approach, taking sides, but not subjectivist, spontaneous, or partisan; debatable, of course, but no longer inside the box without breaking molds. We cannot expect a complete analysis here either, with the due justifications, but only a mobilization of materials and ideas, perhaps serving as a rethink, assuming that is better than not thinking at all.

### THE IMBROGLIO OF DIVERSITY OF REASONABLY EFFECTIVE PSYCHOTHERAPIES

The first imbroglío is produced by the existence of different psychotherapies that, however, have a similar efficacy. The similarity in efficacy does not seem to correspond with the differences in their conceptions and procedures. Without denying that there may be psychological therapies that are more effective than others depending on the problems, the point is that none of the great traditions of psychotherapy (psychodynamic, humanist, existential, behavioral, cognitive-behavioral, contextual, systemic, or constructivist) can be cast

aside due to lack of efficacy. This phenomenon, as is well known, is called the «Dodo bird verdict», taken from *Alice in Wonderland*, according to which «everyone [or “every one” in the case of psychotherapies] has won and all should have prizes».

The phenomenon is good news and bad news. Good for users and clinicians and bad on the other hand for clinicians as they cannot be sure how and why they are effective since others doing different things are also effective. The phenomenon, no doubt enigmatic and challenging, occurs in psychology and psychiatry, but not in medicine, except for the psychiatric specialty. Whereas, in medicine, it would not make sense to ask a clinician about his or her approach (if one did so, he or she would be perplexed), in psychology and psychiatry it makes a lot of sense, because the treatments differ in approach and procedure. Why is this so in psychology and psychiatry and not in medicine?

In order to raise the problem in depth, while it has to be within the space of an article, I am going to mobilize three types of questions: ontological, anthropological, and psychological. The ontological questions concern the nature of the realities with which psychology and psychiatry work. The anthropological questions involve the common factors shared by the different disorders on the one hand and the different psychotherapies on the other. The psychological questions refer to certain potentially therapeutic effects inherent to all psychotherapy.

### **Ontological issues: natural versus interactive entities**

The question of the nature of psychological and psychiatric phenomena—what kind of thing, entity, or reality they are—leads to the distinction between natural entities and interactive entities, established by the philosopher of science Ian Hacking. Natural entities are fixed, there, indifferent to the classifications, interpretations, and knowledge of them. Be it a molecule, a neuron, a stone, water, a horse, a planet, or the stars. No matter how the water is blessed, how much a horse is called «donkey», or how much zodiacal constellations are seen in the stars, the water, horse, and stars remain, indifferent. On the other hand, interactive entities are influenced by the classifications, interpretations, and knowledge that humans typically have. The blessing of someone in a religious or family ceremony giving approval to a relationship does not leave one indifferent. If someone is called «donkey», for example, a child at school, he may assume that role or react against it. The study of the zodiacal constellations in relation to the date of birth may lead someone to guide their life by the horoscope. Awareness campaigns aimed at the general population regarding certain everyday problems ended up re-qualifying them to the extent of turning them into mental disorders such as social anxiety, panic disorder, bipolar disorder, or ADHD, to name a few (González-Pardo & Pérez-Álvarez, 2007; Pérez-Álvarez, 2018).

As I have already pointed out, the realities with which



psychology and psychiatry work are interactive entities, susceptible to be influenced by their own description. The descriptions are also prescriptions, reordering realities in a way that seems to be natural. But their nature is interactive, not fixed, and indifferent. Psychotherapy is based on this possibility. Just as there is no psychotherapy for diabetes or hepatitis. The «great attack of hysteria» described by Charcot at the end of the 19th century is only the most spectacular case of a process in which the description constitutes the very reality it describes. Clinicians need, of course, to reorder and classify the material they work with, so the interactive entities are also called practical entities or types, with regard to their classification, statistics, clinical management, treatment, etc. However, that does not mean that they are natural entities like diseases themselves. It may be practical to pass them off as diseases, but practical for what, whom, and at what cost remains to be seen.

The interactive entities or practical types with which psychology and psychiatry work are different from the natural entities of medicine. In the latter, the description itself does not affect the entity described, its pathogenic process, or clinical presentation. The diagnosis of diabetes or cancer does not alter the metabolism of glucose or the tumor process. It is another thing whether it changes the status of the person (sick individual, patient) and their life and existential situation. Having said that, there is nothing to prevent diseases that are strictly medical from also having an interactive aspect, mediated by psychobiological processes. The placebo would be an example of this. Likewise, psychological problems can, of course, have neurobiological processes involved that still form part of the interactive circuit, without the need to hypostatize them, as is usually the case.

### **Anthropological issues: common factors**

The common factors are a recurring theme about how the effects of psychotherapies may be due partly or largely to shared elements, rather than to their specific ingredients. There are numerous lists of common factors. Here I will adhere to psychiatrist Jerome Frank's approach in his comparative study of psychotherapies from an anthropological perspective (Frank, 1982; Frank & Frank, 1993).

Frank refers to the common factors of both psychological problems and psychotherapies. All psychological problems regardless of the diagnosis they receive share a demoralization characterized by worry and hopelessness. At the beginning of a psychotherapy, rarely will it not bring a remoralization, relief, and hope. On the other hand, all psychotherapies share four factors: healing agent, clinical site, mythology (rationale), and ritual (therapeutic actions).

The healing agent, in the case of a clinician, is already a factor in the process of help and healing, starting with the social recognition of their activity, in addition to their personal prestige (fame, opinions), appearance (manner, look), and the emotional and trusting relationship they establish. The figure, appearance, bearing, and behavior (ethos) of the clinician, a mere step to the clinician thesis not something trivial, a mere

support and a step toward their technical performance. Technical competence depends on who performs it and how. Personality and professionalism are difficult to separate in psychotherapy. It will not be the first time that a clinician applies common sense techniques that someone has already proposed to the individual seeking treatment, but these now take on new value applied in the context of a therapy, in a clinical *setting* or *site*.

The clinical site or «healing environment» as Frank says is another factor associated with the agent and which is also potentially healing because of the meaning it implies, such as health center, hospital, clinical unit, clinic, consultancy, etc. The clinical site may not be sacred or magical like that of a shaman, shrine or temple, but it is not trivial. The things that the practitioner does and says in his or her place, in time and manner, are more serious and «sacred» than these things in any other place where the same practitioner has been approached. The practitioner is not a prophet in his house, in bars, or in places where his wisdom has been required. But in the center where he works he is a shaman. Similarly, a priest's words do not become a sermon unless he says them at Mass nor do a judge's words issue a ruling unless he wears a robe and is in court in a timely manner. What the clinician does and says in his «site» is more important, influential, and even *performative*, than what he sometimes believes himself to be, according to the patients who often refer to things that influenced them but to which the clinician did not bestow any importance, perhaps fused with his techniques.

However, the mythology or *rationale* is the central component of therapy, the one that gives meaning to the agent and the site, as well as to the ritual or the therapeutic actions to be applied. Mythology refers to the frame of reference, conception, and explanation that the therapy offers of what is happening to the patient as well as what should be done accordingly. All psychotherapies have their mythology. And all the psychotherapies, mythology included, have their *raison d'être* according to the historical context (end-of-the-century Vienna, post-war California), the problem for which it originated (hysteria, depression, family disruptions), and the genius of its founder (few really like Freud, but all with his talent).

The mythologies of the different psychotherapies work for two reasons that feed into each other: they are plausible without being true and they create their own niche of self-confirmation that makes them seem true to their «believers and practitioners». The different mythologies cannot all be true, if any, however scientific and evidence-based they may claim to be. But what they all are is plausible, i.e. believable, reasonable, *rational*, which is why they work to some extent and even to a good extent. Here, the notion of mythology does not mean fiction, deception, lie, or something similar, although this use is not ruled out either. Mythology is not without meaning, logos, or *raison d'être*. The passage from myth to logos is a *myth*.

The mythologies or *rationales* of psychotherapies are not so



much *true* explanations, as true *explanations*. They are not true explanations because they are not describing a reality that is there, exempt, against which it can later be validated. Rather, they deal with an interactive reality that they re-create in some way, not in any way. This does not mean that the *rationales* are equally practical and coherent either. In fact, some *rationales* could be, for example, more pathologizing than normalizing and respond more to some interests than to others. However, they are true explanations because they have, so to speak, everything necessary to give an account of the problem and what to do: a psychopathological conception, evaluation, therapeutic actions, etc. In this sense, it was said that they were complete and self-sufficient for clinical work.

Psychotherapies with their *rationale* or mythology create their own niches in the course of their practice, publication of cases, research, scientific literature, dissemination, etc. The niches have two related fields: one occurs in the course of the therapy—in session, so to speak—and another occurs on a cultural scale. The therapy socializes the patient in its model and approach, where the patient learns the language of the clinician. The cultural scale is produced by the scientific literature, the academic and professional training, the clinical manuals, the public examination syllabuses, the MIR/PIR exams, the publications, the institutionalization of its practice, and popular knowledge. There is a double socialization: in the therapy itself and in the clinical culture. Freud's case «the Wolf Man» epitomizes this double process of patient and reader of Freud at the same time.

Charcot made history once. From the Tuesday sessions at La Salpêtrière, Charcot's hysteria spread throughout France (and not only) through the literature of the literati attending the famous sessions (e.g., the Goncourt brothers) whose novels the people would read and through Charcot's own scientific literature that doctors would read (Shorter, 1992, pp. 186-193). Without the need in this case for a campaign to raise awareness among the population of the type of pharmaceutical marketing, the literature of the literati and the scientific literature close the circle. The century of psychoanalysis would follow, with the greatest psychological socialization known so far. The behavioral and cognitive-behavioral culture would also come, the humanist culture relaunched by positive psychology and coaching, the movement of self-esteem, psychotraumatology, and cerebrocentrism, overlapping each other. An imbroglio if ever there was one.

The ritual refers to the specific therapeutic actions of each therapy. Every psychotherapy has its rituals: lying on a couch, interpretations, functional analysis, self-report, exposition, restructuring of beliefs, relaxation, homework, clarification of values, mindfulness, empty chair, remembering positive things, and many, many more. Even non-directive therapies have their ritual in listening and paraphrasing what the client says. There is a great debate in psychotherapy about the specific role of techniques in relation to common factors posed in terms of the medical model (focused on techniques) and the

contextual model focused on relationships and common factors (Wampold & Imel, 2015). The debate extends to the question of whether psychotherapy is a human or a technological science (Pérez-Álvarez, 2019).

One conclusion is that the techniques work insofar as they are part of the context of a therapy with its relationship and *rationale*. However, arranging the context of the therapy also has its *techné*: art and science. Starting with relationship ethics, this is not something natural, spontaneous, as if to say that the therapist is *born*. On the contrary, the therapist is *made* and with different degrees of excellence. Not to mention the *rationale*, which is the basis of psychotherapy.

### **Psychological issues: certain effects**

Psychotherapy carries with it certain potentially healing effects inherent in all healing practices. Even before specific help begins, the presence and words of the clinician probably place the patient in an expectant perspective, to say the least, given the needy situation he finds himself in. The welcome reception may evoke the support he has had in the past. Against this background, certain well-known psychological effects should be noted. These are none other than the placebo, Barnum, Pygmalion, and Charcot effects.

The eternal placebo effect finds in psychotherapy its most perfect model. We could say that psychotherapy is a placebo, if it were not that the placebo usually has a non-specific, obscure, confusing, if not negative, psychological sense coming from medicine. Rather, we should say that the placebo is psychotherapy (Kirsch, 2005; Wampold et al, 2016). What is non-specific in (psychological) medicine is specific to psychology. Although it is difficult, if not impossible, to separate the placebo effect from psychotherapy, it can be conceded in the traditional medical sense and for the sake of this argument, that all psychotherapy is graced by the placebo effect. It refers to the placebo that presupposes trust, faith, and hope in the therapy (packaged as expectations), and that the therapy itself will cultivate with the therapeutic alliance, the *rationale*, and so on. That is why it is practically impossible to compare a given psychotherapy with a psychotherapy-placebo. When a psychotherapy-placebo is designed to be entirely comparable to a real (already established) therapy, another therapy results (interpersonal psychotherapy, present-centered therapy, or befriending).

A placebo-psychotherapy is still a psychotherapy, not inert, without specific properties, as a pill-placebo could be. There is no such thing as an inert psychotherapy. Thus, according to the medical sense, a given psychotherapy also has its placebo effect, with the particularity that it is homogeneous with the psychotherapy itself, inseparable in the end.

The Barnum effect, as you will remember, refers to the identification that people usually have with psychological reports even when these do not derive from their results in the tests that have been applied to them. And this acquiescence is all the more so when the reports are generic, ambiguous, and—naturally—favorable, whether they say that one has a sense of humor, is sensitive, intelligent, a good friend. This



acceptance contributes, of course, to confidence in the clinician and thus to the course of psychotherapy. The clinician may also be impressed by their diagnostic acumen and their Barnum-type habit reinforced. The diagnoses, with which patients often identify, can easily enter into this mirage. The fact that the client «buys» the clinician's speeches does not validate their truth, nor the excellence of the clinician. Nor does it mean that there are no precise discourses. Whatever the case, the Barnum effect probably contributes to the therapist's halo and to the benefit from therapy.

The Pygmalion effect refers to how expectations and the corresponding effort exerted can help and move a patient forward beyond the initial prognosis. It is no longer just the patient's expectations (the Galatea effect in the Pygmalion myth), but the clinician him- or herself who operates the change. How often the (best) clinicians become advocates for patients who seemed lost. This kind of self-fulfilling prophecy can also be for the worse, when not expecting much from someone leads to stopping doing what otherwise could do something else for them. The Pygmalion effect is summed up in Goethe's well-known aphorism: Treat a man as he is, and he will remain what he is; treat him as he can and should be, and he will become what he can and should be.

The Charcot effect refers to the phenomenon of shaping one's own reality, which one describes as if it were there in a natural way. This is what happened to Charcot with his impressive description of the «great attack of hysteria» that everyone could see live and in person in his sessions, as well as in his writings and pathographies. Nothing could be more objective. Psychiatric diagnoses can easily incur this effect when the clinician selects and draws out from the patient the symptoms that fit the diagnosis he is aiming for. The diagnosis becomes a puzzle in which the clinician has the design and the patient has the pieces (Stanghellini, 2004). This diagnostic «sagacity» contributes to the prestige of the clinician, but it still has its sleight of hand in selecting the pieces and assembling the picture, leaving out of the frame everything else, perhaps the most important thing for understanding the problem at hand. The diagnosis of ADHD is only one conspicuous example of this phenomenon (Pérez-Álvarez, 2018; Pérez-Álvarez & García-Montes, 2007).

The idea is that these effects (placebo, Barnum, Pygmalion, Charcot) that often overlap and complement each other can contribute to the effect of the psychotherapy, any of the therapies, so they all win and claim their prize.

The above-mentioned issues (ontological, anthropological, and psychological) clarify the enigma of the similar efficacy of different psychotherapies. However, they expose important problems derived from not distinguishing the qualities of psychotherapies. Thus, psychotherapies that could be pseudo-scientific while still being effective would remain in place. Likewise, broad psychotherapies would remain that respond to the biomedical model, which would not cease to be debatable on the other hand. The above calls for scientific clarification, which leads to the second imbroglio we mentioned.

## THE IMBROGLIO OF THE DEMARCATION BETWEEN SCIENCE AND PSEUDOSCIENCE

It is easier to show than to say what is pseudo-science, reusing a well-known aphorism of Wittgenstein. Most of us easily recognize astrology, clairvoyance, creationism, healing faith, dowsing, ufology, reiki, or renaissance therapy as pseudoscience. However, it is not so easy—if it is possible—to establish the demarcation between science and pseudoscience. Even though we can also recognize sciences such as physics, astronomy, chemistry, evolutionary biology, geology, or paleontology without hesitation. The demarcation only seems to be clear to those who do not think much. There is nothing like not thinking in order to have something clear.

### Is there not a scientific method?

There are lists of pseudoscience criteria. Scott Lilienfeld and collaborators propose a list of nine criteria (Lilienfeld et al, 2015, p. 7): abuse of ad hoc hypotheses, absence of self-correction, lack of peer review, emphasis on confirmation rather than refutation, reversal of the test by skeptics, absence of connectivity with other disciplines, reliance on anecdotal and testimonial evidence, obscurantist language, and the «mantra of holism» or context to explain negative results. But, none of these criteria is a marker of pseudoscience, nor is there a cut-off score. If you examine them one by one, you will see that they overlap with the best science. I will review the first one only: the abuse of ad hoc hypotheses.

The abuse of hypotheses makes use of two practices that are already *peccata minuta* among researchers: p-hacking and HARKing.

- ✓ p-hacking basically consists of hacking the research data itself in order to reach «p» levels of statistical significance by selecting the data that contribute most to its scope (from the many obtained) or collecting the necessary data until it is reached (for example, by enlarging the sample).
- ✓ HARKing (Hypothesizing After the Results are Known) consists of (re)formulating the hypotheses after the results are known.

Both p-hacking and HARKing are practices recognized as «deadly sins» in psychology research and other disciplines (Chambers, 2017). Both practices contribute to the testing of the hypotheses either through the selection of «converging» data (p-hacking) or through ex post facto readjustments (HARKing). If it were down to this criterion, how much scientific psychology and psychiatry would fall on the side of pseudoscience? For the moment, both would be in *peccata*, and not so *minuta* in the end.

Many cling to the scientific method, but this does not exist as a thing in itself. There is no science without method, but there is no one scientific method either. Each of the above-mentioned sciences has different methods, and some of them are not experimental, nor do they base their scientificity on prediction. The so-called «golden method» of research in psychotherapy cannot be taken as a criterion for demarcation,



no matter how much it supports evidence-based practice.

First of all, RCTs are blind to how and why psychotherapy works, which would be most scientific to know. Second, RCTs show effectiveness for a patient who does not exist: the average. On the other hand, meta-analysis is still a kind of «statistical alchemy» turning study alloys into gold (Feinstein, 1995). In a way, meta-analysis contradicts the characteristic of science that consists of separating and differentiating, not working with mixtures, like alchemy. As Alvan Feinstein says, «the intellectual appeal of doing meta-analysis and aggregated study collections has often been used as an escape from more fundamental scientific challenges» (Feinstein, 1995, p. 78). On the other hand, evidence-based practice (reduced to RCTs + meta-analysis) leaves out much of the psychotherapy that is actually applied in clinical settings (Fava, 2017; Feinstein & Horwitz, 1997). Since the «golden method» of research offers evidence of a patient that does not exist and leaves out really existing therapies, it does not seem that it should be idolized as the «golden calf» as venerated in mainstream psychology and psychiatry.

Of course, meta-analyses can be improved (Fava, 2017; Ioannidis, 2016). However, the worst thing about the «golden method», in my opinion, is that it formats the way of thinking of clinical researchers, as well as students, academics, and professionals, as if it were *the* way of thinking scientifically, rather than *a* way of doing science, not only with its technical limitations, but with its constrictions of one's own thinking. Without challenging the «golden method», what I advocate is methodological pluralism, including RCTs and meta-analysis. It is a pity that the availability of a statistical technique should end up destroying scientific thought. Meta-analytical studies are greatly appreciated by their authors and the journals because they are very quotable, however they do not necessarily mean an advance in knowledge, but often an entanglement in meta-analysis and counter-meta-analysis and mega-meta-analysis (analysis of numerous meta-analyses). An imbroglio.

### **EMDR and CBT as a test bed**

According to the «golden method», a therapy such as Eye Movement Desensitization and Reprocessing (EMDR), which is cited as an example of pseudoscience (Herbert et al, 2000; Lohr et al, 2015), is as scientific as cognitive behavioral therapy (CBT), which is a benchmark for scientific therapy. Beyond the evidence shown, the objection to EMDR for which it is considered a pseudoscience is due to theoretical reasons related to the component of eye movements that gives it its name and which, however, seems to be superfluous (Herbert et al, 2000; Lohr et al, 2015). Component dismantling studies show that EMDR would work with eye movement substitutes, as also suggested by the deriving of ad hoc hypotheses with which its name and initial conception are protected. The pseudoscience label of EMDR comes from the obscure, implausible, and seemingly superfluous nature of the component that gives it its name and is its reason for existence: eye movements, bilateral stimulation, and reprocessing.

If this objection were applied to CBT, it would also be pseudoscientific. Component dismantling studies show that the cognitive component appears to be superfluous (Dimidjian et al, 2006; Jacobson et al, 1996; Vázquez et al, 2020). Other studies also show that cognition does not appear to be the mechanism of change (Burns & Spangler, 2001; Longmore & Worrell, 2007). On the other hand, CBT also has its own derived hypothesis now invoking an obscure evolutionary theory of «energy conservation» (Beck & Bredemeier, 2016).

Both CBT and EMDR have empirical support. However, it does not seem that their functioning is due to the «mechanisms» that are their foundation and *raison d'être*. Both have reached the same point from different paths (Follette, 2018). EMDR started based on an obscure procedure, but it gradually accumulated evidence of its efficacy until it qualified as empirically supported therapy, even though its explanation remains in the dark. On the other hand, CBT was based on a clear and effective theoretical procedure, whose effectiveness, however, has been revealed over time to be due to reasons other than those originally thought to explain it, and its functioning is now obscure.

In reality, both EMDR and CBT are «victims» of pseudo-scientific labelling by the same model of positive science that they profess. I refer to their emphasis on specific techniques (eye movements, cognitive restructuring) directed at supposed pathogenic mechanisms (unprocessed memory, depressogenic schema) reactivating obscure processing processes (tautological, in fact).

One difference may be that EMDR is based on a very specific technique (eye movements, bilateral stimulation), as if all its eggs were in the same basket. While CBT has a double basket, a cognitive-behavioral wicker basket. In this way, CBT is kept on the firmest ground and in the central lanes of the psychology mainstream highway. However, EMDR is entering the highway with force, instead of following the shoulder. Although the mechanisms that give it its name remain to be seen, it is already an integrative therapy (with components of many therapies) that nevertheless «sells» under its brand name and franchise. Which is seen as disloyal. This center-lane dispute may partly spark a pseudoscience war. Although it is a fair war, it is not always free of fears and interests.

The question here, however, was to test the distinction between science and pseudoscience on what is perhaps the most challenging test bed in psychotherapy today, the contrasting of EMDR and CBT. From this test, both come out badly off, victims—as I see it—of their own positivist biomedical model. From this test, it is not clear whether the demarcation between science and pseudo-science is strong or weak. It would be strong if we take for granted the detection of CBT as pseudoscience since it is considered a benchmark of scientific psychotherapy. It would be weak if we understand that, in reality, the demarcation is not capable of distinguishing the most clearly scientific therapies from those most suspected of pseudoscience. In the meantime, it should be clarified whether the bar should be raised (Follette, 2018) or what. The demarcation between science and pseudoscience is not the only option of interest when



assessing the scientific quality of psychotherapy. There is also bad science, scientism, and integrationism. Even when EMDR and CBT are in stalemate and on the table, the postman always calls twice.

### **Bad science, scientism, integrationism**

Bad science here does not refer to malpractice or abuse of science in the sense that Ben Goldacre and Peter Gøtzsche use this expression applied to medicine. I am referring to something more subtle, even paradoxical, such as the inadequacy of the best science (standard science, «the golden method») for the study of human phenomena such as psychological and psychiatric disorders. Good science could be bad science depending on what it is applied to. I developed this idea about ADHD in order to understand how it is that, whilst it is a clinically unsustainable concept, it is nevertheless supported by researchers and clinicians who are convinced in good faith of its evidence (Pérez-Álvarez, 2018). Three are three hallmarks of bad science as I understand it here.

- 1) *When science does not correspond to the phenomenon it studies.* If, as has been said, psychological and psychiatric realities are interactive entities (practical types), instead of natural entities or natural types, a natural positivist science method is not exactly the most appropriate. It can be applied, but at the cost of talking about the average patient, decontextualizing the problems, and hypostasizing them as something that people have.
- 2) *When preconceptions confirm themselves.* If it were down to the confirmation of hypotheses, psychology and psychiatry would be the most scientific of all sciences (Fanelli, 2010). The aforementioned practices of hacking one's own data and HARKing are only two among others as science confirms itself. Confirmatory factor analysis already suggests this purpose. From factor analyses, meta-analyses, and symptom networks you get what you put in, such that their successive application (to other populations, in other countries) gives the impression of confirming pre-existing underlying realities. Much of the leading clinical science is correlational, and correlations between neuronal correlates and behavioral activities abound today. Although on the first day of class, it is already said that correlation does not imply causation, in the current neurocentric context the correlation is often taken as the basis, foundation, and «cause». Bad science with high technology and methodology.
- 3) *When science prevents us from seeing problems in other ways.* This aspect is the worst. Science accumulates knowledge, but it can also condition and constrain future knowledge. ADHD is a paradigmatic case of how good science is actually bad science, in that it prevents seeing the problem in another way (for example, as a form of vitality in relation to the social, family, and school context) and offering help without the need for diagnosis (Pérez-Álvarez, 2018). Many other supposed mental disorders would admit similar analysis and conclusions. But to do so, one must navigate against the

current, not assuming it is going in the right direction taking people's problems downstream.

An alternative to bad science from the typical good science, as well as the latter being more judicious, is the clinical method as a scientific method focused on the intense study of individual subjects. After all, this was the method of the most eminent psychologists of the 20th century: Skinner, Piaget, and Freud (Hoggbloom et al, 2002). There is also the functional analysis of behavior, qualitative research, the semi-structured interview and, finally, methodological pluralism, without forgetting RCTs and meta-analysis. As an example of a semi-structured interview and a phenomenological approach applied to psychotic disorders, I would not fail to mention two chapters in texts edited by Professor Eduardo Fonseca (Pérez-Álvarez & García-Montes, 2018; 2019).

Scientism is the consideration of science as the best if not the only knowledge on which to guide the various aspects of life and society. And here the science par excellence is natural science (Williams & Robinson, 2016). Other sources and forms of knowledge such as the social sciences, the humanities, philosophy, literature, and art, as well as tradition and common sense, rely on what natural science says.

Scientism, as a critical concept of the exceeded uses of science, does not imply any disregard for science. Rather, science itself implies a critical self-awareness of its own possibilities and limits. Before science existed, from the seventeenth century onwards, the human world had come a long way and since then it does not seem to be entering a «happy world» or anything like that which science may have been doing. The very idea of happiness exceeds its confinement in a science, as positive psychology arrogates to itself (Pérez-Álvarez, 2016). In fact, positive psychology, more than science would be scientism based on experiments and correlations that, in the best of cases, show the obvious, such as being well is better than being ill (Pérez-Álvarez et al, 2018). Evidence-based practice still has aspects of scientism insofar as it aims to replace practice-based evidence, common sense, local knowledge, and prudence or phronesis, which are fundamental in any clinical practice of value. In fact, phronesis or prudence are reclaimed today in medicine (Bontemps-Hommen et al, 2019; Saiz Fernández, 2018). In the face of pandemics, medieval measures such as isolation are still in force. No evidence-based practice has been applied to get out of the pandemic, unless it is the vaccine that is yet to come. Experience, prudence, and common sense also count.

Integrationism refers to the tendency to incorporate different theoretical perspectives, levels of analysis, data, and procedures in relation to an issue, for example, psychological or psychiatric disorders. This tendency highlights both the complexity of the aspects and factors involved, and the plurality of the existing approaches. It should not be simply assumed that the plurality of approaches is due to the complexity of the phenomenon itself. The complexity itself may also be due to some extent to the very plurality of existing approaches. It is enough that a technology exists for it to be applied to everything, like Maslow's famous hammer. Each approach



adds a brushstroke to the picture and claims its share.

The number of subpersonal aspects—molecular, cellular, neural circuits, etc.—that are undoubtedly involved, come into play, perhaps more because of «scientificity» (bad science, scientism), than because of the nature of the problem. Everything that can be related and studied today can also entangle the very complexity of the phenomenon. And what would be worse, it would lead to looking for the keys in the wrong place, like someone looking for their keys under the lamppost. It would seem that today the lampposts are the neuroimages.

An example of integrationism can be seen in the Research Domain Criteria (RDoC), with its mix (without considerable criteria) of levels: genes, molecules, cells, circuits, physiology, behaviors, self-reports, and paradigms, within its purpose of finding damaged neural circuits. EMDR is another example of integrationism of levels, approaches and techniques that, by the way, is serving as a safeguard against the pseudoscientific reproach by reoffering itself as integration therapy. But integration does not clarify how the eye movements that give it its name work. Integration has all the benefits, but it is not in itself the most scientific. Science consists more of separating, discerning, and analyzing, than mixing, melting and, in a manner of speaking, trying to extract gold from alloys as alchemy did.

### IN SUMMARY

Pseudoscience is not the only category for assessing the uses and abuses of science, nor is it probably the most relevant one. Focusing only on the science-pseudoscience tension has two problems. On the one hand, it assumes that the science applicable to human affairs is natural positive science, to the detriment of human science (Pérez-Álvarez, 2019; Pérez-Álvarez & García-Montes, 2019). The notion of pseudoscience is subsidiary to natural positive science. It is ironic that its application to CBT also turns this therapy into pseudoscience, along with EMDR. Both are victims of their scientific self-conception opting for obscure processing mechanisms. On the other hand, it overlooks the possible abuses of standard science itself, here identified as bad science, scientism, and integrationism. While I believe that the introduction of these categories unblocks the science-pseudoscience imbroglio, it still leaves everything at an epistemological (scientific) level without raising the fundamental ontological questions, starting with why it is a psychological or psychiatric disorder.

### WHAT IS A PSYCHOLOGICAL DISORDER?

There is no room here for anything more than an observation note, not even observations, with regards to where the argument would run. It is not a question of anything unusual, but rather of recovering and reworking ideas from the psychiatric and psychological tradition. My own reworking has four sides: phenomenological, existential, behavioral, and contextual (Pérez-Álvarez, 1996; 2012, 2014, 2018; 2019; in preparation).

A psychological disorder is a life problem that has become entangled in a way that one's efforts end up being more part of

the problem than the solution. Problems in living would be the material from which the disorders are made (their material cause) such as, for example, adversities, burdens, threats, conflicts, crises, disappointments, frustrations, uncertainties, invalidation, mistreatment, losses, meaning of life, loneliness, or traumas. The million-dollar question would be when and why a life problem becomes a disorder, typically a clinical category (its formal cause) according to the most common way of categorizing and experiencing problems in our society. There are no markers or psychometric tests. The notion of a loop could be used to see if a problem is already a disorder that is taking on an entity. The loop situation would be perceived as a certain hyper-reflexivity or intensified self-awareness of aspects of oneself that interfere with one's life course.

Pathogenic hyper-reflexivity would be recognized when reflexivity is no longer clarifying what is happening to one, nor does it lead to any decision, but instead keeps one stagnant, at the expense of rumination, worry, emotional disturbance, and abnormal experiences. Hyper-reflexivity is a broader concept than mere intellectual reflection (rumination, preoccupation). It consists of one's intensified self-presence towards oneself including feelings, emotions, memories, and anomalous experiences (voices, cenesthesias) which, in turn, can enter the circuit of rumination and worry. In any case, interfering with the course of life.

In this perspective, a *disorder* is a life situation in which life has turned against you (turned upside down, revealed your limits) and thus has upset the way you are in the world by stretching your possibilities to the limit given the circumstances. Allow yourselves these somewhat far-fetched expressions to introduce the notion of *limit situation*. Karl Jaspers' notion of the limit situation, taken up by today's psychiatrists, is a refreshing idea for re-conceiving disorders. According to this notion, a disorder is neither inside nor outside, but rather one is *in* a situation. A situation is an experiential and behavioral configuration due to both life circumstances (losses, conflicts) and what one does and does not do in relation to them, according to one's own history. It is a gestalt relational concept (configuration), not a sum of symptoms. The contextual model of depression (as opposed to the cognitive model) is an example of a situation in this sense (Pérez-Álvarez, 2014, pp. 120-126).

Biological factors, always involved in a more or less conspicuous way, are included in the circuit of the situation, without hypostasizing them. The brain is conceived as a mediating organ, neither causal nor creative, in any case forming part of an organism *situated in* the world. The organism is always changing in a more or less perceptible way in the course of life's activities and vicissitudes, including disorders and psychotherapies. The Skinnerian notion of a *changed organism* should avoid assumptions such as storage, unprocessed memories, and all that new phrenology of locating disorders in brain areas.

The notion of disorder as a loop and situation is opposed to the notion of disorder as a disease due to some alleged internal processing or neuro-cognitive «breakdown».





Psychotherapy is not conceived as a technical intervention to repair failures such as unprocessed memories (EMDR) or pathogenic patterns (CBT). In fact, these therapies do not seem to work because they do that, as they assume. Rather than pseudo-science, they are actually «bad science» as explained above and in particular EMDR is also a kind of lifesaving integrationism. For its part, CBT is being renewed with the new process-based CBT (Hayes & Hofmann, 2018; Hofmann & Hayes, 2019), to see if it is the last word in psychotherapy (Pérez-Álvarez, in preparation).

The disorder as a situation is in tune with other notions of psychiatric and psychological tradition including the «neurotic fix» (Adler's unsurpassable expression), «symptom» as a survival strategy conceived with different nuances according to a psychodynamic, systemic approach or the recent Power Threat Meaning Framework, and «reaction» before the DSM-III. The handy «adaptive disorder» comes to be recognized within the diagnostic systems of the situation or crisis through which the patient or client is passing. Crisis is another related concept. Psychotherapy in this perspective is conceived as an interpersonal context of help in clarifying the problems and current situation in order to relocate oneself on a horizon of meaning (direction and sense) beyond the «symptoms» themselves. For this purpose, there are many actions according to the therapies, such as functional analysis of behavior, clarification of conflicts, confrontation, coping, interpretation, problem solving, acceptance as a form of change, self-distancing, clarification of values, etc., without forgetting to mention existential and contextual therapies.

## CONCLUSION

The notion of the imbroglio, perhaps because of its expressiveness, draws attention to the confusing panorama of psychotherapy and invites its clarification and eventual exit. Two imbroglios have been highlighted: the different psychotherapies of similar efficacy and the problem of the demarcation between science and pseudoscience. The first one was clarified after being analyzed in ontological, anthropological, and psychological terms. The second was unblocked by showing that the concern for pseudoscience (while still relevant) masks other even more relevant problems that science tends to harbor, such as bad science, scientism, and integrationism. However, these clarifications remain at a scientific (epistemological) level, without raising the basic ontological questions, starting with what is a psychological disorder. The ontological questions are prior and propaedeutic to the scientific ones. An idea of disorder based on life problems has been outlined in connection with the concepts of situation and hyperreflexivity. The affinity of this conception with others in the clinical tradition has been shown. It is not a question of starting over, but of beginning to think outside the box, recovering and re-working ideas from the clinical tradition.

## CONFLICT OF INTEREST

There is no conflict of interest.

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