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Critical Thinking about Psychotherapy

Stephen Hupp, Jean Mercer, Bruce A. Thyer, and Monica Pignotti

We'll give you the good news first – multiple evidence-based treatments (EBTs) have been identified for most psychological challenges that children and adolescents face, and the Society of Clinical Child and Adolescent Psychology, also known as Division 53 of the American Psychological Association, has been at the forefront of identifying EBTs for youth (the term “youth” will be used throughout this book to represent both children and adolescents, and sometimes even infants). As you glance through the chapter titles of this book, you should know that authors writing on these same topics in the companion book, entitled *Child and Adolescent Psychotherapy* (Hupp, 2018), were able to find research-supported approaches to treating all of these topics. In some cases, the treatments are *well established*, meaning they have at least two well-designed studies by different research teams. In other cases, the research is not quite as strong, but there's enough to give any clinician a good starting point for conducting therapy. Admittedly, no treatment works for everyone. Moreover, even when a treatment does help a child improve psychological functioning, the child may still continue to experience some symptoms over time. That is to say, the science of clinical child and adolescent psychology is not perfect, is not complete, and is not finished moving forward.

Now for the bad news – the science of clinical child and adolescent psychology is not being utilized to its fullest. Not even close. Despite having access to information about which treatments have solid research support, many therapists are not using these treatments. Even worse, they are frequently using treatments that have already been shown to be ineffective (Lilienfeld, 2005; Lilienfeld, Ammirati, & David, 2012). In fact, one study identified 63 ineffective treatments for youth that have been discredited in a Delphi poll with experts (Koocher et al., 2015). Ineffective treatments are problematic because they (a) waste time, (b) cost money, (c) damage the credibility of therapists, and (d) may cause considerable harm to youth and their parents. The use of

ineffective treatments is also disconcerting when considering the strong literature in support of several evidence-based approaches. With so many valuable treatments available, there is no good reason to use a treatment that has been shown to be ineffective, especially if it has been shown to be harmful.

1.1 Pseudoscience and Questionable Ideas

Some practitioners continue to argue that an ineffective treatment works, often relying on poorly designed studies to bolster their arguments, even after well-designed studies show the treatment is ineffective. Other times practitioners grossly misinterpret the results of other studies as a way to support their use of an ineffective treatment. Both cases are examples of engaging in pseudoscience. Although pseudoscience has been said to be a “fuzzy” term (McNally, 2003), a more formal definition was offered by the philosopher of science Mario Bunge as “a body of beliefs and practices whose practitioners wish, naively or maliciously, pass for science although it is alien to the approach, the techniques, and the fund of knowledge of science” (Bunge, 1998, p. 41). In essence, pseudoscientific practices give the superficial appearance of science, using scientific-sounding jargon borrowed from legitimate science, yet lacking the substance of having valid scientific research to back up their claims. Pseudoscience is distinguished from antiscience, another threat to the mental health profession (Olatunji, Parker, & Lohr, 2005) in that antiscience proponents denigrate science itself or maintain that there are different ways of knowing, all equally valid. Proponents of antiscience often unapologetically offer treatments that are utterly lacking in any kind of scientific support and often make no attempt to claim such support exists.

Pseudoscientific practices are insidious because unless the consumer is educated in how to evaluate claims of scientific evidence, they could be deceived into thinking that such practices, often widely promoted on the internet, have legitimate scientific evidence supporting their use. In recent years promotions have become increasingly sophisticated, with online newly established “peer-reviewed” journals where the peers doing the review are all proponents of the practice being published and stand to benefit financially. The unfortunate result is that increasingly, studies of inferior quality are being published in such journals and cited as scientific research, declaring that the practice is “evidence based” even though that concept is also widely misunderstood (Thyer & Pignotti, 2011).

To make matters even more confusing, some of these practices actually do meet the American Psychological Association's criteria for EBTs (Chambless et al., 1998; Southam-Gerow & Prinstein, 2014) in that some questionable practices, such as energy therapies, have managed to publish at least two group design experiments showing superiority to no treatment or even to a psychological placebo treatment (see Feinstein, 2008 for a review and Pignotti & Thyer, 2009 for a rebuttal). The American Psychological Association criteria have come under criticism for not being rigorous enough, since they do not take into account the mechanism of action, allowing for the possibility that these treatments may work better than placebo because they have other active elements, such as exposure therapy, in common with existing evidence-based practices, rather than anything unique to the novel treatment, such as energy meridians. Rosen and Davison (2003) have suggested using empirically supported principles of change as the key way to identify what works rather than using trademarked therapies or other treatment packages. Unless consumers are alert to what to look out for, they are at risk for being charged much larger fees for services than they would have paid for a well-researched practice that has undergone rigorous testing and has well-recognized empirically supported mechanisms of action.

A number of factors can give rise to a claim being made about the positive effects of a treatment being labeled pseudoscientific. Here are a few hallmarks of pseudoscience:

- Exploited expertise – a genuine expert in one field provides testimonials in an area outside the expert's area.
- Bogus expertise – a supposed expert claims to possess research or practice credentials that are simply false or originated from diploma mills or otherwise unaccredited institutions.
- No research support – patently unsupported claims are made by the treatment's promoters who usually have a vested financial interest in the treatment.
- Inflated research support – exaggerated claims are made on the basis of poorly designed or conducted research or research published in journals with very low scientific standards.
- Misleading research support – the findings from a well-done study are misinterpreted or misrepresented.
- False research support – a study is published in a scientific journal, but the actual study was never conducted. Sometimes even highly respected journals get hoaxed by unscrupulous authors.

- Purple hat component – a central mechanism of action of the touted treatment is extremely implausible based on existing scientific knowledge.
- Overly broad focus – the treatment is said to be highly effective for an amazing array of different conditions (presumably with different etiologies).

Not all pseudoscientific treatments will be associated with all of these features, and some scientific treatments will also share these features, but generally the more of these hallmarks are present, the greater the likelihood one has encountered a pseudoscientific practice.

With pseudoscience being the driving force behind this book, experts in each topical area were recruited to write each chapter. Authors were encouraged to write about treatments that were pseudoscientific in some way or at least seriously questionable. In particular, authors considered treatments that met these descriptions:

- Implausible treatments – when treatments have not yet been tested and do not have a plausible theory behind why they would be effective.
- Ineffective treatments – when treatments have been tested and shown not to work.
- Potentially harmful treatments – when research actually shows these treatments have made the problem worse or have a dangerous side effect.

Additionally, chapter authors were prompted to consider other misperceptions or practices that could influence treatments in a pseudoscientific way:

- Diagnostic controversies – when treatment providers invent their own diagnoses, and when experts have a hard time agreeing on diagnostic criteria.
- Questionable assessment practices – when assessment tools have poor reliability or validity.
- Myths that influence treatment – when misperceptions about etiology or the developmental course of a disorder affect treatment decision making.
- Undermining evidence-based approaches – when providers discourage treatments that have been shown to have strong research support.

Chapters vary in terms of how many of these areas they cover based on what was available in the literature, and authors chose which areas to cover based on which were the most alarming.

1.2 Introduction to Skepticism

If you haven't already noticed, psychology is rampant with pseudoscience. But our field is not alone in this regard. In his book, *Demon-Haunted World: Science as a Candle in the Dark* (Sagan, 1996), the great science communicator Carl Sagan pointed out that "Each field of science has its own complement of pseudoscience" (p. 43). Inspired by a list started by Sagan, here are some examples of different types of pseudoscience in their respective fields:

- Anthropology: Bigfoot
- Archaeology: ancient astronauts
- Architecture: Feng-shui
- Art: forgeries
- Astronomy: astrology
- Botany: emotionally passionate plants
- Business: pyramid schemes
- Chemistry: alchemy
- Economics: long-term economic forecasting
- Education: brain training
- Geophysics: flat Earth theory
- History: history denialism
- Journalism: fake news
- Law: pseudolaw (yes, this is a thing)
- Medicine: complementary and alternative medicine
- Meteorology: *Farmer's Almanac*
- Physics: perpetual motion machines
- Politics: conspiracy theories
- Psychology: parapsychology

When you see all of this pseudoscience in one list, it is really quite disturbing, isn't it? If you're not concerned about this list yet, maybe it's because you think nobody really believes in these examples, but a Gallup poll (Moore, 2005) will help to burst that bubble. For example, 24% of Americans reported believing "That extra-terrestrial beings have visited earth at some time in the past." Worse yet, 25% of Americans believe in "Astrology, or that the position of the stars and planets can affect people's lives." Even worse, 42% of Americans believe "That people on this earth are sometimes possessed by the devil."

And keep in mind that we only provided one example per field. This book focuses on only one small part of psychology – psychotherapy with youth. That said, this book contains well over 100 examples of

pseudoscience and questionable ideas. Recent research shows that parents believe a lot of myths related to psychotherapy with children (Hupp, Stary, & Jewell, 2017). For example, 64% of parents reported believing that “Programs like Scared Straight help prevent youth from breaking the law.” Worse yet, 82% of parents believe that “Too much sugar causes hyperactivity.” Even worse, 88% of parents believe that “The Attachment Parenting approach strengthens the mother-infant bond.” In all of the examples, and many more, the results were replicated with a college student sample in a course about child psychology.

Fortunately, a new field has been developing to help combat all of the pseudoscience in all of these fields. The field of skepticism is unique in that it is one place where members of all of the other fields come together toward the goal of shining a light on pseudoscience. You don’t have to look too hard these days to find skepticism conferences, magazines, podcasts, or even television shows. When skeptics communicate using any of these outlets, they spend a fair amount of time debunking pseudoscience in their respective areas. More than that, though, they spend a lot of time sharing with each other how to communicate with other professionals and the public about pseudoscience. That is, *science communication* is a large part of skepticism. One example of science communication is the Guerrilla Skepticism on Wikipedia (GSoW) project that aims to incorporate more critical thinking into entries on Wikipedia, a common place for people to find information (read the Sidebar to learn more about GSoW).

Sidebar Box: What is Guerrilla Skepticism on Wikipedia? by Susan Gerbic

There’s so much nonsense everywhere. So where does one look for information disputing it all? If only there were a reliable, online resource containing well-written articles for the general public, backed up with notable secondary citations, and written in multiple languages. It should be a free resource, and it should be easy to find. Well, that material does exist. It’s one of the most popular websites in the world, and it’s managed by people who care about accurate, free information. It’s called Wikipedia.

I run an editing team that focuses on scientific skepticism topics for that online encyclopedia, and we write articles in multiple languages. We train and mentor people who have never before edited Wikipedia; we are called Guerrilla Skepticism on Wikipedia (GSoW; Gerbic, 2013). Want to see some of our work? Check out

the Facilitated Communication article for one example of a pseudoscientific treatment (Gerbic, 2017). We wrote this material to educate Wikipedia's readers about this discredited technique still in use today by schools and parents who are desperately attempting to communicate with people who have severe communication difficulties. These invalid practices have caused emotional distress and great risk to families and caregivers, so we believe making this known is important. We also contribute to entries about influential members of the skeptical community such as Ray Hyman, a professor of psychology, who along with James Randi, Martin Gardner, and Paul Kurtz is a key founder of the modern skeptical movement.

Susan Gerbic, BA, also known as the Wikapediatrician, is a skeptical activist who educates others about pseudoscience, especially as it relates to "clairvoyant mediums," or as she calls them, "Grief Vampires." For more information about her project, and how to get involved, you can visit <https://abouttimeproject.wordpress.com>.

While you learn about all of the psychotherapy pseudoscience presented in this book, you may get frustrated, you may get angry, and you may get motivated to do something about it. GSoW is one example of something you can start doing today. The final chapter of this book will also delve deeper into the world of skepticism and will hopefully give you more ideas about what you can do about pseudoscience.

1.3 The Concept of Plausibility

Skepticism is not the same as cynicism. Skeptics do not simply reject most ideas on minor grounds because of a general wariness and suspicion about motives and information. Skeptics do keep their minds open about the evidence for and logic of claims – the *plausibility* of ideas (Lilienfeld, 2011). When we think about psychotherapies, or educational methods, or any proposed ways of changing human abilities and behavior, it's a good idea to put on our skeptics' hats and consider whether or not a treatment is plausible. Pseudoscientific approaches are often implausible, as will be seen throughout this book. When a treatment is

implausible, it may actually be harmful in minor or major ways – or conceivably, it may be a breakthrough that tells us how wrong we have been in much of our thinking about human beings.

What does it actually mean when we say that a treatment is plausible – or when we conclude that it is implausible? Plausible treatments have certain characteristics that are the mirror images of implausible treatments:

- a. Plausible treatments have valid internal logic. Examining them, we do not see errors of critical thinking that characterize implausible therapies. For example, discussion of implausible treatments may assume that whatever outcome occurred was caused by the treatment, no matter how the research (if any) was designed. This is a particular problem for evaluation of psychotherapies for children and adolescents.
- b. Plausible treatments are congruent with established psychological information about human beings and their development, whereas the rationales for implausible treatments may directly contradict much that is known. Although it might happen that an apparently implausible treatment would point to real errors in our psychological information, this has rarely, possibly never, occurred.
- c. Plausible treatments can be evaluated in ways that make it possible to reject or disconfirm the assumptions behind a treatment – to falsify the basic hypotheses. Treatments based on the prediction of many possible outcomes from an event are implausible in that they are not testable; this has historically been a problem for psychoanalytic approaches.
- d. Plausible treatments involve ideas about possible mechanisms by which a treatment could operate. If a claimed mechanism does not seem likely to work (for example, that viruses in the digestive tract cause autism spectrum disorder), the treatment may be regarded as implausible. Implausible treatments are sometimes associated with far-fetched suggestions for mechanisms that “sound scientific” because they are based on concepts in use in the biological or physical sciences (for example, details of brain anatomy or function) that are essentially thrown in for purposes of obfuscation and provide “a scientific veneer of legitimacy” (Grimes & Bishop, 2018, p. 141).

Are all plausible treatments necessarily good to use? No, because plausibility alone does not tell us whether a treatment is effective or whether any adverse effects are reported. Plausibility is a reasonable requirement before time and resources go into outcome research.

In times of limited resources, treatments that are implausible do not deserve the expenditures needed for systematic investigation.

1.4 Focusing on Children and Adolescents

In many ways, consideration of psychotherapies for adults and for youth should follow the same rules about plausibility and demonstrated effectiveness. However, there are some special issues about psychotherapies for minors. These issues include the potential harmfulness of treatments for youth, the role played by developmental change in the occurrence of (or recovery from) emotional disturbance, and the fact that treatment of children usually involves parents.

1.4.1 Potential Harmfulness

In recent years, there has been increasing discussion of the possibility that psychotherapies, like medical treatments, can be harmful as well as, or instead of, being beneficial (Dimidjian & Hollon, 2010; Lilienfeld, 2007; Linden, 2013). It is unlikely that any treatment will do major harm to most people treated – if it did, it would not be used again. Because of this, reference is made to potentially harmful treatments (PHTs; Lilienfeld, 2007). These range from demonstrably beneficial treatments with a small number of adverse events, to those whose use expends time and resources without being helpful, to those that are ineffective and have been associated with severe harm including death.

Potentially harmful treatments for children (PHTCs; Mercer, 2017) are included among those described in this book. They are of particular concern for several reasons. It is possible, though not clearly demonstrated, that adverse experiences of children do more lasting harm than similar experiences do for adults. Ongoing research is exploring the roles of adverse childhood experiences (ACEs), and some ACEs under study resemble experiences children may have in the course of PHTCs (e.g., forced holding in holding therapy). Children and adolescents are also more vulnerable than adults because of the problem of informed consent. Adults are able to understand the risks and possible benefits of a treatment and agree to undergo it, but this is not possible for young children and may be difficult even for older adolescents. In addition, refusal of consent by children or adolescents is sometimes interpreted as a symptom of emotional problems such as oppositional behavior, and this may lead to coerced use of a treatment that has clearly been rejected. Unlike most adults, children and adolescents in treatment are often in no

position to seek help or report distressing and harmful events during the treatment, particularly if they are confined to residential treatment centers.

1.4.2 Developmental Change

From birth through adolescence, human beings go through dramatic developmental changes that occur no matter what their environments or experiences are like. These changes are most rapid and noticeable in infancy and early childhood and again become dramatic around the time of puberty. Ongoing developmental change means that for a therapy to be considered plausible, it must be evaluated in terms of known patterns of developmental change. For example, a treatment for autism spectrum disorder cannot be assessed simply by looking at child characteristics on two occasions a year apart, because the children will change and develop in some ways over that period even if no treatment is given.

Pseudoscientific therapies are often presented without consideration of developmental issues. For example, the pseudoscientific “orgone therapist” Wilhelm Reich claimed that he had “cured” his infant son of the Moro or startle reflex by physical treatment from birth to five months of age; in fact, babies normally lose this newborn reflex through maturation during about the same period.

Psychotherapists choosing treatments for children and adolescents need to realize that developmental changes mean that individuals respond to experiences differently at different times in their lives. A treatment suitable for an infant is not likely to be suitable for a school-age child or a teenager. But a number of pseudoscientific therapies are based on the idea of *recapitulation* of developmental events – that by repeating for an older child experiences that are part of the usual lives of infants, the child can be made to return to and renegotiate an earlier period of development. This pseudoscientific approach is evident in implausible treatments involving emotional attachment.

1.4.3 Parents

Because youth normally spend much more time with their families than in therapy sessions, most psychotherapies for children and adolescents include education and training for parents who are “in the trenches” of effort to treat emotional disturbance. This is a very different situation from what we most often see in treatment of adults, and it brings new factors into the picture. Although many parents welcome the chance to

learn plausible and effective ways of helping their children, some are attracted to implausible, pseudoscientific approaches; because they have the legal responsibility for their children's care, they are in positions to choose implausible treatments that may even be harmful. These parents may deeply resent what they construe as blame for their parenting if it is suggested that they need to learn to handle their children in different ways. They may believe that good information can come only from people who have personally experienced similar issues (a position not infrequent among adoptive parents) and prefer to take their advice from relatable pseudoscientific practitioners rather than from science-based psychotherapists.

In most families, parents have the job of *buffering* a child's experiences with the environment, both physical and social. Parents would ordinarily have the job of protecting their child from harmful treatments and reporting such events to the authorities. Other than medical and school personnel, there is no one in our society who has similar powers and responsibilities toward children. This means that if parents are committed to implausible, potentially harmful treatments, and if children do not attend school or receive medical or dental treatment, there is no one to intervene until serious injury or even death has occurred.

1.5 Conclusion

Many therapists and parents believe that pseudoscience is a thing of the past. Unfortunately, it continues to thrive within most fields, and psychology is no exception. Even children and adolescents, along with their parents, frequently encounter ineffective, implausible, and sometimes harmful psychotherapy practices. But all hope is not lost. The science of psychotherapy with youth is also strong. It is our hope that this book will serve as a guide for both therapists and parents so that they can better identify and avoid pseudoscience in child and adolescent psychotherapy.

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