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# Romantic Scientism and the Potential of Fractals for Transpersonal Psychology

(Commentary on Marks-Tarlow's "A Fractal Epistemology for Transpersonal Psychology")

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I am pleased to comment on Terry Marks-Tarlow's paper, "A Fractal Epistemology for Transpersonal Psychology" (this issue -- and all further references to her work, unless otherwise noted, are citations to this paper). I first met Terry at a workshop in the Spring of 2017 that she presented at Goddard College, where I am on the part-time teaching faculty. During her presentation, she made a number of provocative claims about the implications of fractals for transpersonal psychology, most notably that she believed that fractals can solve the so-called "hard problem" of consciousness (Chalmers, 1996). Although I have enjoyed exploring fractals for many years, I was skeptical that their use in transpersonal psychology could go beyond providing an interesting metaphor for how the inner contains the outer -- and vice versa, as well as a mathematical way to model some transpersonal phenomena, including both "subjective" and "objective."

In discussing my concerns with her after that workshop, I suggested she submit a paper to the *International Journal of Transpersonal Studies* on this topic so that I could have an opportunity to closely examine and respond to her extraordinary claims through an adversarial collaboration. She agreed to this, and we also agreed to invite a number of others to comment on her paper. My hopes were that all participating would benefit from clarifying their thinking on the potential value of fractals for transpersonal psychology, and my own concern was that this value not be overstated in a type of "romantic scientism."

I have discussed scientism and romanticism in a number of papers as related to endemic problems in mainstream and transpersonal psychology respectively (Friedman, 2002, 2015). In these papers I approached scientism as an overly rigid adoption of the external features of science to

make claims look authoritative, while I approached romanticism as the overly lax adoption of folk and other non-substantiated beliefs that make claimants feel good. I have debunked romanticism within transpersonal psychology in a number of papers, such as one exploring Aikido, a traditional Japanese martial art that is popular among many transpersonal psychologists, whose adherents often make claims about using mysterious powers based on folk beliefs in subtle energy (i.e., "ki"); I showed how some of Aikido's extraordinary phenomena can be explained in mundane scientific ways (Friedman, 2005). I and colleagues have also debunked scientism in a number of papers in mainstream psychology, such as one exploring the "critical positivity ratio" (i.e., an influential claim that there is an optimum ratio of positive to negative affect in individuals and groups specified as 2.9013, which was touted as a universal and invariant number); we showed numerous mathematical and other errors made in arriving at that ratio (Brown, Sokal, & Friedman, 2013). In a later paper reflecting on the debunking of this ratio, I and colleagues discussed how combining romantic notions within a scientistic framework provides a particularly convincing package that is especially difficult to see through. We called that deceptive combination, in which scientism is used to obfuscate the dubiousness of a claim that appeals to romantic inclinations, "romantic scientism" (Brown, Sokal, & Friedman, 2014). In regard to the now debunked critical positivity ratio, that extraordinary claim was one of the most influential within modern mainstream psychology, despite that it was clearly bogus. However, it was asserted in a scientistic way as being derived mathematically from the Lorenz equations of physics (note, this is widely known for producing a butterfly-like graph showing a so-called chaotic tipping point), and it broadly appealed to

romantic inclinations seeking a simple formula to solve many of life's complex dilemmas, especially as it can be graphed into a very appealing butterfly. My fear was that Terry's extraordinary claim regarding fractals could be seen as just another example of romantic scientism, as it relied on beautiful graphs and complex mathematics that could appeal to both romantic and scientific urges.

I am pleased that, in writing her paper and through informal dialogue with me, Terry shifted from the more extreme position that she seemed to assert at Goddard College, as her final article acknowledges now that fractals do not actually resolve the hard problem, claiming instead that "fractals can illuminate complex interrelationships, such as the interpenetration between brain and mind, self and other, or inner versus outer realms" (Marks-Tarlow, 2020, this issue). This term "interpenetration" across different polar opposites remains dualistic, and I see no indication that fractals can go beyond being an interesting model that provides metaphorical, but not literal, solutions to transpersonal dilemma such as the hard problem.

In the current version of her paper, she takes a more modest position and, if her current position had been presented at Goddard College, I probably would not have quibbled – as it now is actually close to my own position. However, the differences that remain between my and Terry's positions on the worth of fractals for transpersonal psychology still deserve comment, as do the positions of the various commenters made about Terry's paper in this issue. Putting this into perspective, I have long been concerned about premature closure to the eternally vexing questions within transpersonal psychology from those who claim to provide a unilateral solution, and Terry's earlier claim seemed to do just this, whereas her current claim does not. Whether the proposed solutions involve metaphysical notions, such as all is God and God is love, or something clothed as being scientific, such one-size fits all solutions make me nervous.

Consequently I still ask, are fractals more than just an interesting metaphor and model for addressing important transpersonal concerns? Alternatively, is embracing fractals in the way that Terry proposes, despite moderating her position, still

problematic in a way that could be called romantic scientism? Do fractals merely provide an effective way to mathematically describe some paradoxes within transpersonal psychology, and therefore serve just as an appealing metaphor, or do they go further by not only resolving some of these, but also by pulling those willing to engage deeply into the heart of these paradoxes in experiential ways that transcend mere external modeling? Terry's paper alludes to the latter possibility. In contrast, although I remain fascinated by the potential for fractals, I also remain somewhat dubious about their deeper value for furthering transpersonal psychology in integrative ways that can heal the various splits, such as between inner subjectivity and outer objectivity as framed in the hard problem. Perhaps the appeal of fractals as a solution for some of transpersonal psychology's deepest concerns is only for its romantic scientism, providing what looks like an easy solution that seems on its surface to answer all the hard questions but, in the end, disappoints.

With that stated, there is nothing wrong with good modeling. In fact, the major research stream I have followed for many years involves researching the construct of self-expansiveness, which is based on a cartographical model (Friedman, 1983, 2013/2015, 2018). However, in these works I have discussed extensively how my model, and indeed all scientific models, has its limits. If this is all that fractals can provide, their worth may still be impressive.

Rather than my commenting on each specific commentary provided to Terry's paper, I think they stand on their own as an interesting and informative collection of responses. By no means are these commentaries from any representative sample, but Terry and I did invite a range of people at the intersection of transpersonal psychology and mathematics, as well as some who had interest in fractals but no particular expertise in relevant areas. The comments vary widely, as some provide mostly emotional-based support for the intuitive appeal of fractals, while others are quite technical in approaching from diverse fields, such as neuroscience, as well as transpersonal psychology and mathematics. Most of the commentaries were positive to Terry's project, seeing it as providing a useful meta-framework that provides a better

metaphor than older frameworks, such as Euclidean forms, Newtonian cause-effect relations, and bell-curve statistics, including some commenters explicitly valuing the prospects of the newer over the known limits of the older frameworks. There seems to be a preponderance of support for fractals being a more persuasive method for imagining and scientifically exploring transpersonal phenomena than other known approaches, but some express hesitation about this conclusion. And there was some dissent, such as one claiming that fractals provide nothing unique, as other mathematical (e.g., perfect numbers) and geometric (e.g., the Möbius strip) approaches rival fractals in their potential for being useful as metaphor and model. I saw no specific endorsement of fractals as actually solving the hard problem, summed up by the conclusion that fractals simply do not address the qualia of consciousness, and only provide a metaphor and model, as well as perhaps a useful method, for understanding some of elusive transpersonal phenomena.

Consequently, I remain agnostic, combining a little bit of skepticism with an equal bit of hopefulness, about the potential role of fractals for really understanding transpersonal phenomena more deeply, not just for providing a superficial approach to external modeling. Terry's article dares to take a strong stance, although not as strong as the one she initially took with me, and is both stimulating and provocative. It is also extremely well-written and thought-provoking, and in being accompanied by a number of commentaries addressing the potential value of fractals for furthering transpersonal psychology, her and my interchanges serve as a good example of a fruitful adversarial collaboration. I also hope readers will carefully consider what fractals might offer for transpersonal psychology by weighing the dangers of romantic scientism by remembering the old nostrum, "keep an open mind, but not so open that your brains fall out."

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