Psychoanalysis: Art and/or Science ? A Brief Contribution From Quantum mechanics

Gerald J. Gargiulo, PhD

Imagination is more important than knowledge. For Knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution.

Albert Einstein

One of the fallouts from living in a world where Newtonian physics colors our everyday experiences – observation, measure and most importantly replication (repeatability) - is that is promotes the distinction between what is art and what is science. Art is, by definition, unique. Its tools are many, e.g., metaphor, color, movement, mystery - which are not realties we necessarily associate with Newtonian scientific observations. Newtonian physics commands attention not only because in our macro world it works, and works very well, but because its

repeatability gives it an exact stability; which is a necessary experience in our everyday life. Freud tried to make his theoretical understanding and models of the mind universal and verifiable, knowing that without such a perspective his science would be suspect. His theoretical models are, ultimately, just that, i.e., models; a fact that some psychoanalysts have difficulty accepting.

The clinical practice of psychoanalysis is, by definition, not exactly repeatable, given the individuality of the parties involved. Consequently psychoanalytic clinical interventions have been criticized for not being scientific. Their individuality suggests an art rather than science. I have obviously summarized this critique of psychoanalysis from the perspective of a Newtonian worldview.

I might add, also, that the religious denominational aspect of the various theoretical psychoanalytic schools has not helped present psychoanalysis as a scientific discipline. A scientific mode of operation is dedicated to pursuing truth – but such a quest is, by necessity, an ever

open and ongoing question. Truth, in a scientific framework, has more to do with process over possession.

It is very difficulty to briefly summarize even a few of the findings of quantum physics; even after nearly a hundred years of discovery and exploration. Having said that…let me try. One of the most basic findings is the conclusion, to Einstein's disbelief, is that God (or, *the Ancient One* – Einstein's designation) does play dice with the world. That is to say that from quantum findings there is no possibility of exact repeatability; rather we live in a world of high probability; not the exact repeatability evidenced in Newtonian experience. Such a finding of high probability vis-à-vis strict determinism is basic and should modify our understanding of free association and dream interpretation.

Turing to clinical practice I would like to offer a brief overview of how some of the basic findings of quantum thought can be of help in our understanding of psychoanalysis. Each quantum observation – that is, interaction – is necessarily unique although following a prescribed protocol. An observation, for example, of a proton – relative to its

location and momentum – is necessarily individualized. By very force of its nature it is not exactly repeatable but only generically so. Part of the mystery of quantum findings is that each observation of a proton, for example, creates the proton….although it is always waiting to be created – so to speak. (D.W.Winnicott's reflections might be of help here). A proton always exists as an excitation in an energy field and it is simultaneously created by observation. I would like to ask the reader to see a parallel here with clinical interventions, e.g., interpretations. There are of course a set of procedures and protocols for a quantum observation as there are valid guidelines which any analyst follows in formulating interpretation and/or intervention.

Of course we are talking analogy here; but analogy in the quantum world is what we have. All we understand of the quantum world, as Niels Bohr reminds us , is our mental concepts, not the quantum world itself. In terms of process each quantum observation is necessarily unique. Just as each psychoanalytic intervention is unique. Just as each work of art is unique. The reality of the necessary individuality of each quantum

observation has, I believe, bearing on practice of clinical interpretations and interventions. That is, individuality is not per se unscientific. It has a valid reflection in quantum observations.

Additionally, one of the more profound mysteries of quantum findings is the reversibility of cause and effect. John Wheeler, from Princeton University, demonstrated how changing an effect can change a cause – something we are not familiar with in our macro world. By way of analogy, a patient telling and retelling his or her thoughts, phantasies, dreams and/or hopes does, in fact, change his/her history. When patients experience that the past is likewise the present and that the present re-creates the past they are creatively mirroring Wheeler's findings. Richard Fenyman speaking to this past/present experience named the process whereby a proton takes every possible route – even backward in time - "sum over histories." That psychoanalytic technique necessarily demands a high degree of creativity is obvious; that psychoanalysis itself is an exercise in creativity is obvious.

Is psychoanalysis an art or a science reflects a question reflecting a macro consciousness. It is simultaneously both. Just as, by way of comparison, a proton is both created and always exists.

Quantum mechanics findings have been repeatedly validated – just pick up your cell phone and you will appreciate what quantum mechanics has made possible. And, as I have briefly outlined, there is more than an interesting parallel between quantum mechanics experience and psychoanalytic practice.[1]

Such a conclusion does no violence to the reality that psychoanalysis is a profoundly human enterprise. That is, one pained human being listening to another as Bion reminds us; one particularly sensitive and introspective clinician listening his/her unconscious in order to hear another, as Reik depicts. I used the above quote from Einstein as a reminder to myself and others that true scientific growth comes from the imagination as much as from measurable procedures.

[1] Anyone interested in exploring the contributions of quantum mechanics should read any of the works of Brian Greene. My own text *Quantum Psychoanalysis* develops many of themes I have mentioned here.

Psychoanalysis is a science of the mind, it proposes certain models to understand the complexity of human experience – as does any science. What I am proposing is that its clinical procedures are more understandable using quantum models rather than Newtonian models. In its best moments psychoanalysis offers models of understanding – not concrete existent realities, similar to quantum mechanics postulates. A scientific mindset is more than comfortable with usable but simultaneously changeable models. A willingness as well as a dependency upon testing models, and retesting, is evidence of a scientific mindset just as an appreciation and experience of creativity in responding to individuality is a mark of art.

A willingness to examine what one is doing – be it scientific and/or artistic or both – necessarily - is basic to any pursuit of who we are.

Response to Gerald Gargiulo's article, "Psychoanalysis: Art and/or Science? A Brief Contribution From Quantum Mechanics"

Gerald Gargiulo is the author of *Quantum Psychoanalysis: Essays on Physics, Mind, and Psychoanalysis Today*, International Psychoanalysis Press, 2016, and his deep knowledge of quantum physics and its relevance to, and affinity with, psychoanalysis permeates his discussion of whether psychoanalysis is an art or a science. He also is an accomplished poet, and thus, in reading his discussion whether psychoanalysis is an art or a science, we encounter a sensibility that embraces both artistry and science as elements of psychoanalytic theory and practice.

Gargiulo introduces his article with a quotation from Albert Einstein: "Imagination is more important than knowledge. For Knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution". With this quotation, he demonstrates and defends his approach to the question, for imagination is necessary both for art and for science.

Further, he immediately questions assumptions we form when using the easily recognized concepts of science represented by Newtonian physics. He points out that Newtonian physics describe what he calls our "macro world", a world which can be observed and measured, the results of such operations resulting in replication. When he introduces the term "repeatability" as a substitute for "replication", he leads us to contrast the uniqueness of art with a certain "sameness" in Newtonian physics.

Since I was a poor science student in my formal education, and would still be so were I still a student in an educational institution, I immediately began to assume that Gargiulo was going to share my perspective, that psychoanalysis is more of an art than a science. Gargiulo then contrasted Freud's desire to establish psychoanalysis as scientifically valid, that his "theoretical understanding and models of the mind" are "universal and verifable", because Freud wanted the science of psychoanalysis to be recognized. I was further reassured when Gargiulo then pointed out that the clinical practice is not repeatable, due to the unique individuality of each person in psychoanalysis. And then he establishes that science always entails a search for truth. On reading that, I began to challenge my own assumptions, since a search for truth does seem to be meaningful in the psychoanalytic endeavor.

And then, due to his knowledge of quantum physics, and his enthusiasm for applying quantum physics to psychoanalysis, Gargiulo wittily and wisely turns any assumptions a reader may make on its head. In introducing quantum physics as scientific knowledge, scientific truth, into his discourse, he establishes that “there is no possibility of exact repeatability; rather we live in a world of high probability; not the exact repeatability evidenced in Newtonian experience. Such a finding of high probability vis-à-vis strict determinism is basic and should modify our understanding of free association and dream interpretation.”

Gargiulo leads the reader into making a quantum leap into new possibilities in the psychoanalytic situation. Since imagination is a common necessity in both art and science, since psychoanalysis addresses the unique needs of the unique individual, using a range of knowledge and technique in the clinical situation, our curiosity is piqued. While perhaps we may agree with Gargiulo that the flexibility of “high probability” may better describe our understanding of basic psychoanalytic concepts such as free association and dream interpretation than does “strict determinism”, what does this freedom imply?

Imagination and artistry: Gargiulo becomes somewhat playful. His article invites us into a quantum world of proton behaviors, which are intriguing. Even someone who struggles with science, someone like me, can be engaged and fascinated. Even more so, when he points out that each observation of a proton creates a proton, a perfect example of the Heisenberg uncertainty principle, which describes those research occasions in which the very act of measurement or observation directly alters the phenomenon under investigation. I actually learned about the Heisenberg effect, which is a quantum theory principle, nearly 40 years a in a psychoanalytic course early in my psychoanalytic education! I didn’t know then it was a scientific principle, advanced science, quantum physics! I heard words. They seemed poetic to me. I didn’t see a mathematical equation, which is how a physicist would express it. I believed it. My gut reaction was that of course it was true.

Gargiulo emphasizes that the telling and retelling of thoughts, phantasies, dreams, hopes, in the psychoanalytic situation, “does in fact change his/her history”. How? That, in his wisdom, Gargiulo leaves up to our imagination.

Leaving the question up to our imagination leads to his once again posing the question, “is psychoanalysis an art or a science”, and answers that the question itself “reflects a question reflecting a macro consciousness. It is simultaneously both. Just as, by way of comparison, a proton is both created and always exists.”

I am grateful that in this article, Gerald Gargiulo gave me the opportunity to recognize the wider scope of science, the role of imagination in science, and a new way to think about the psychoanalytic endeavor.

Merle Molofsky
mmpsya@gmail.com

Response by Gargiulo

I want to thank Merle Molofsky for her generous response to my article. Let me say at the beginning that I myself am not a scientist. My point in bringing some of what we have learned from quantum findings is that, by analogy, we might better understand the clinical process of psychoanalytic therapy. One need not know physics to appreciate the role of analogy in gaining a deeper appreciation of a situation.

I quote Einstein, as Molofsky approvingly notes, since he affirmed the role of imagination and creativity in aiding our search for a deeper understanding of reality. Its interesting that Einstein greatly appreciated Freud's writing style – which he conveyed in their numerous letter exchanges – but was not a follower of his theories. Perhaps his focus was so centered on the outer world that the world within him held less interest. This is a bit puzzling, nevertheless, since his undying commitment to determinism would be consonant with many of Freud's assumptions.

Of course as therapist and patient interact they necessarily change what is experienced, another analogy with quantum findings. An analogy that I have found deepens my appreciation of clinical experience. My point in making such an analogy is simply to say that there is no need to be defensive and say psychoanalysis is just an art; unique interventions are not, per se, unscientific. What my readings in quantum theory have made clear is that psychoanalysis is both and art and a science …at the same moment. And that is the point.

Finally Molofsky playfully notes that she leaves it to the reader's imagination to decipher what I mean when I note that a good analysis, following Paul Ricoeur, changes a person's history. Change the effect, as John Wheeler established, and you can change the cause, literally in quantum observations, symbolically in therapy. To re-experience and revisit childhood events, memories, phantasies, now with mature understanding, is no longer to be the victim of events but to be the conveyer, now of with insight and whenever possible, compassion. That gives one a new childhood.

What has been singularly unscientific about psychoanalysis has been the behavior of many of its practitioners. For too many years, again as Molofsky conveys, have analysts from different perspectives promoted the belief that unchanging truth had been found; that technique was codified and that theory was no longer theory but fact. It no longer needed to be tested and retested. That is, that models of the mind, particularly the model of a psychoanalytic unconscious, somehow reflected a transcendent reality. Needless to say such beliefs are the ground space of religion and not the home of either science or art.

JerryGargiulo@Gmail.Com