

Editorial

Complementarity

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Collins English Dictionary defines *complementary medicine* (also called *alternative medicine*) as 'the treatment, alleviation, or prevention of disease by such techniques as osteopathy, homeopathy, aromatherapy, and acupuncture, allied with attention to such factors as diet and emotional stability, which can affect a person's wellbeing'.*

Many understand this as 'unconventional medicine'. This meaning immediately divides medicine into two fundamentally different schools and people into two groups: those that believe and those that doubt or disbelieve whether complementary medicine realistically adds (complements) anything to what conventional medicine has to offer.

In physics, '*complementarity* is a fundamental principle of quantum mechanics ... It holds that objects have complementary properties which cannot be measured accurately at the same time. The more accurately one property is measured, the less accurately the complementary property is measured, according to the Heisenberg uncertainty principle. Further, a full description of a particular type of phenomenon can only be achieved through measurements made in each of the various possible bases—which are thus complementary. The complementarity principle was formulated by *Niels Bohr*, a leading founder of quantum mechanics'.†

Wave-particle duality is one example of complementary properties. 'Wave-particle duality is the concept that every elementary particle or quantic entity exhibits the properties of not only particles, but also waves. It addresses the inability of the classical concepts "particle" or "wave" to fully describe the behaviour of quantum-scale objects'.‡ In simple terms: waves can sometimes be particles (and particles can sometimes be waves), but never both at the same time.

As Einstein wrote: 'It seems as though we must use sometimes the one theory and sometimes the other, while at times we may use either. We are faced with a new kind of difficulty. We have two contradictory pictures of reality; separately neither of them fully explains the phenomenon of light, but together they do'.§

By some the (theoretical) wave function is not regarded as real as 'what cannot be observed does not exist'. Carl Friedrich

von Weizsäcker suggested instead that, 'what is observed certainly exists; about what is not observed we are still free to make suitable assumptions. We use that freedom to avoid paradoxes'.§

There is a parallel between the wave-particle duality and the duality between alternative medicine and conventional medicine. The consequence of complementarity is that the complete truth about reality can only be found if observations that seemingly contradict each other are being brought together. Trying to explain one (part of) reality with the laws and equations that rule in the domain of another is impossible, and still that is what material medical science expects from homeopathy and other forms of energy medicine.

Another term for particle-wave duality is *particle-wave paradox*, and translated into the realm of healing it is better to speak of a paradox between the observations in 'particle' medicine and those in 'wave' medicine. The term *paradox* is better as it acknowledges both realities (points at a larger paradigm) and is more 'nondual' (there is ultimately only one reality).

The definition of complementary medicine in *The American Heritage Dictionary* comes closer to Bohr's definition of complementarity: 'A method of health care that combines the therapies and philosophies of conventional medicine with those of alternative medicines, such as acupuncture, herbal medicine, and biofeedback'.**

This definition comes very close to the definition of integrative medicine. To take quotes from Wikipedia is tricky here as the very biased definition there creates new duality by speaking of evidence-based medicine and alternative medicine, as if the one excludes the other. Hopefully the adjectives such as conventional, complementary, alternative and evidence-based can one day all be dropped and medicine per definition takes account of the whole person (body, mind and spirit), including all aspects of lifestyle, while honouring the therapeutic relationship and making use of all therapies appropriate to the person concerned.

In Greek mythology the half-god Asclepius is considered to be the world's first physician. The snake that coils around his staff can be seen as a first expression of medicine involving both wave/field (snake) and particle/matter (staff). But then, the Greek had no problem taking both the seen and the unseen world as very real.

* Collins English Dictionary—Complete and Unabridged, Harper Collins Publishers; 2003.

† <http://en.wikipedia.org/complementarity>

‡ http://en.wikipedia.org/waveparticle_duality

§ Einstein A, Infeld L. *The Evolution of Physics*. Cambridge University Press; 1938.

§ http://en.wikipedia.org/wiki/Copenhagen_interpretation

** The American Heritage Dictionary of the English Language. 4th ed. Houghton Mifflin Company; 2009.