

RESONANCE PHENOMENA AND QUANTUM RESONANCE THEORY

Matt C. Keener

Imagine a theater. It is dark—then light illuminates the stage. The players emerge into view and the play begins. A tale unfolds with characters both strange and familiar. The audience becomes immersed in it. (Let's assume this.) The audience holds its breath, laughs, and cries at the proper times. Despite fictional characters, the emotional responses are appropriate—and real.

Imagine a concert hall. Curtains rise and the music begins. Again, the audience becomes immersed in the sounds. A variety of emotions are evoked—e.g., melancholy, struggle, joy. However, the emotional context seems unclear. How does one tonal configuration evoke melancholy and another joy? Why does music bear such a powerful influence, anyway?

Let's return to the theater. A lone person stands onstage in a simple costume. No props, no backdrops. A monologue ensues. As expected, the audience becomes immersed in the storyteller's voice. The particular words and phrases—influenced by every tonal inflection—evoke a variety of intense emotions in the listeners. Behold the awesome power of language.

Resonance implies a common association. In these previous examples, a series of emotional experiences (let's call them X_1 , X_2 , X_3 , etc.) are shared among a group of people. In resonance terms, such experiences are identified as resonance frequencies—or the act of 'communicating on the same wavelength'. On the other hand, each emotional experience (such as experience X_1) will vary for each individual (resulting in X_{1a} , X_{1b} , X_{1c} , etc.) if the situation is examined more closely (and this requires a change of perspective). During resonance, the complex frequencies of the individuals aren't the same—only similar with respect to those common resonance frequencies. According to quantum resonance theory, identities manifest as wave distributions of diverse sub-identities¹ and while general rules may apply for any given collective, these rules are dynamic and non-absolute: "Postulate 11: to any static rule there are continual exceptions."²

How does one become many? It's a question of perspective. In terms of frequencies and waves, a single wave can be described as the sum of many waves. In the nineteenth century, Fourier demonstrated that any complex wave could be represented by a sum of perfect waves with different amplitudes and wavelengths. One wave is the same as many waves—*almost*. The many waves are perfect (i.e., perfect mathematical waves) and the single wave is complex (producing patterns less recognizable as a wave). This necessary complementarity arises here since both descriptions (one complex wave vs. many perfect waves) are essentially differing perspectives of the same identity. It's how you look at it. This necessary question of perspective in quantum resonance theory poses some intriguing possibilities.³ Just how many ways might observation and observer influence one another? How might resonance be influenced?

¹ Keener, M. (2000), *Quantum resonance theory, Heisenberg's uncertainty principle, central tendency and the golden mean*, online paper at <http://www.xmission.com/~mkeener/essays02.html>.

² Keener, M. (1999), *The Quantum Resonance: A Theory of Life*, online paper at <http://www.xmission.com/~mkeener/document.html>, p. 16.

³ Keener, M. (2000), esp. paragraphs 7-9.

According to quantum resonance theory, “sexuality is resonance”.⁴ So let’s talk about sex. Imagine two people—any sex insofar as sexual preferences are compatible—sitting on a long couch with a significant space between them. Let’s assume they experience mutual attraction and arousal. One person moves a little closer to the other person, testing the waters and displaying signs of interest. The other person moves closer and returns similar signs of interest. The attraction and arousal increases mutually. They continue moving closer, and closer, and closer, all the while intensifying the attraction and arousal, and eventually achieving thresholds of consummation along the way—a touch, a kiss, an orgasm. Maximum resonance.

What’s happening here? (*No, besides that...*) A skeletal representation of the situation begins with two people as quantum resonance identities. A third quantum resonance identity is created when the first two identities meet on the anonymous couch and provide mutual attention.⁵ This corresponds with the systems concept of *structural coupling* wherein an organism is coupled with its environment in a symbiotic relationship. In a sense, each person acts as the environment (or immersive experience) for the other person during resonance. More accurately, however, the third quantum resonance identity acts as the immersive experience for both people.

So what is the ‘third’ identity in this picture? It is the common resonance (or relationship) between the two differing identities (i.e., the people)—it is an aspect of union. Returning to the examples at the beginning of this essay, the same principles apply with more than two people given that “the audience becomes immersed.” Furthermore, as the number of involved people grows, the number of involved quantum resonance identities increases exponentially. This phenomenon of growth relates to the systems concept of *autopoiesis*—i.e., self-creation.⁶

In theory, this happens in any situation involving a common resonance—imagine two angry people meeting (on a couch, perhaps), and then let’s assume they experience mutual aggression (i.e., each person’s attention and aggression becomes directed at the other). What might you expect? Intensification. The resulting brouhaha shows resonance in action—and it’s clearly a ‘snowball effect’. Now imagine an angry group with mutual aggression. Tension escalates. Given the right conditions and some foreplay, the mob becomes downright ugly. A group of angry people become capable of so much more—and how many survive the resonance?

Resonance is synergy. During resonance, the energies of the common resonance frequencies are intensified for all quantum resonance identities involved. This scenario becomes complicated in application, as discussed. So let’s examine the phenomenon of resonance from a somewhat simpler—and more empirical—perspective. Using mechanical terms, resonance intensifies the amplitude of the standing wave; and therefore, the amplitude of the standing wave is maximized at frequencies of resonance. The reader is advised to remember that a quantum resonance identity includes an implicit aspect that cannot be represented through an explicit example alone. Nevertheless, a brief examination of the standing wave is surprisingly informative.

⁴ Keener (1999), p. 42.

⁵ *Ibid.*, p. 40.

⁶ Maturana, H. & Varela, F. (1980), *Autopoiesis and Cognition: The Realization of the Living*, Boston: D. Reidel Publishing Company; and also Keener (1999), pp. 19-20.

For purposes of this essay, a standing wave is:

...a combination of waves of equal amplitudes traveling in opposite directions [that] gives rise to a stationary vibration with a spatially dependent amplitude. This ability to view standing waves as combinations of traveling waves, and vice versa, will often be utilized in dealing with wave motion.⁷

As it happens, the standing wave isn't simply a standing wave. As predicted in quantum resonance theory,

The quantum resonance always manifests as complementary aspects aligned in some manner with the alpha and omega aspects (in contextual variations such as particle and wave). ...[A]nd any pair depends completely upon its holarchic reference for its identity.⁸

Such is the case with standing waves (defined solely in spatial terms) and traveling waves (defined in terms of space and time). This can be extremely confusing because the alpha and omega aspects in quantum resonance theory also correspond in general with the explicit and implicit. However, standing waves and traveling waves are both explicit from our perspective in this context. (This implies the existence of unidentified implicit complements for both standing wave and traveling wave identities along an implicit-explicit axis in this particular context.)

The nature of the perceived complementarity is determined by perspective. A complementarity exists between the omega perspective (i.e., a whole—generally implied; transcendence) and the alpha perspective (i.e., many explicit and diverse expressions; immanence).⁹ Also, as discussed elsewhere,¹⁰ an alpha perspective perceives exclusive complements and is related to the principle of central tendency and the standard probability distribution; an omega perspective perceives inclusive complements and relates to the golden mean and fractal nesting. Therefore, the alpha and omega identities depend upon perspective (i.e., context—or “holarchic reference”).

Let's return to the topic of resonance. Given an identity that is both standing wave and/or two traveling waves (of equal amplitude and opposing direction), resonance maximizes both the spatial amplitude of the standing wave and the speed amplitude of the traveling waves. Now let's introduce the other side of the picture. The complement for resonance is antiresonance—a state that minimizes the spatial amplitude of the standing wave and the speed amplitude of the traveling waves. Within the relative simplicity of a mechanical perspective, resonance and antiresonance provide a natural symmetry to the mathematics. There is nothing necessarily unusual or profound in the phenomenon of antiresonance—or is there?

⁷ Kinsler, L. E., Frey, A. R., Coppens, A. B., & Sanders, J. V. (2000), *Fundamentals of Acoustics* (4th Ed.), New York: John Wiley & Sons, Inc., p. 47.

⁸ Keener (1999), p. 17.

⁹ Related to omega and alpha representations; *ibid.*, pp. 26-27; and also M. Keener (2000), *The quantum resonance: Mistakes and confusions*, online paper at <http://www.xmission.com/~mkeener/essays03.html>, paragraph 3.

¹⁰ Keener (2000), *Quantum resonance theory, Heisenberg's uncertainty principle, central tendency and the golden mean*.

In quantum resonance theory, resonance and antiresonance relate to the complementarity of (apparently) living and non-living identities—or healthy and unhealthy behavior.¹¹ As already discussed, it's always a question of perspective. An adequate exploration of antiresonance is beyond the capacity of this essay—transgressing many physical and metaphysical boundaries. However, the reader may wish to consider for themselves the possible unspoken implications of antiresonance behind this discussion of resonance.

Returning to the examples at the beginning of this essay, the resonance of a single emotional experience (such as X_1) actually reflects a complex 'moment'. Such an emotional moment might include an array of potentially conflicting emotions. Furthermore, each of these single moments resonates most intensely when its various elements resonate most intensely themselves; e.g., a state of mind exemplified in the art of drama as 'a total commitment to the moment'.

Furthermore, resonance involves potentially far more than emotional experience. Briefly consider behaviors and cognitions. Resonance manifests in behavior through psychological modeling and culture (on various social levels). Cognitive resonance is implied in language since thereby humans communicate abstract and complex thoughts. Cognitive resonance also implies a potential for telepathy, and this has already been considered.¹² Although an unpopular assertion—and lacking in conclusive evidence—a final verdict on telepathy has not been delivered. Besides, evidence suggests the brain may function in a resonance manner.¹³

Resonance may explain a great deal more than expected. Since resonance relates to energy frequencies, a striking relationship with the *chakras* exists in quantum resonance theory.¹⁴ And this is not an unprecedented position. Consider the following, taken from an online source exploring resonance both in relation to yoga and as a theory of everything:

Definition

The Law of Resonance has a relational character, i.e. expresses the way in which two or more apparently different things or phenomena selectively communicate (are linked), being integrated into an unitary Whole. The links which unite all things in the Universe (physical objects, mental processes, psychic phenomena, spiritual levels, in other words everything manifested) have as basis the process of Resonance.¹⁵

¹¹ Keener (1999), p. 18.

¹² Sheldrake, R. (1981), *A New Science of Life: The Hypothesis of Formative Causation*, Los Angeles: J. P. Tarcher, Inc.

¹³ Lehar, S. (current), *Harmonic Resonance Theory: an alternative to the "Neuron Doctrine" paradigm of neurocomputation to address gestalt properties of perception*, online paper at <http://cns-alumni.bu.edu/pub/slehar/webstuff/hr/hr.html>.

¹⁴ Keener (1999), p. 27.

¹⁵ NATHA (Nordic Center for Spiritual Development) (current), *The law of resonance: The hidden key of all the keys of the manifestation of the universe*, online paper at <http://www.natha.dk/Resonance.htm>, paragraph 3.

On the other hand, Sheldrake's concept of morphic resonance provides a more empirical exploration of resonance—and morphic resonance strongly resembles quantum resonance. Morphic resonance is part of Sheldrake's hypothesis of *formative causation* that “proposes that morphogenetic fields play a causal role in the development and maintenance of the forms of systems at all levels of complexity.”¹⁶ According to this hypothesis, *morphogenetic fields* operating through *morphic resonance* explain the formation of complex systems—especially living systems. Interestingly, these fields operate as units of probability in *probability structures*.

...[M]orphogenetic fields in general are not precisely defined, but are given by probability distributions. It will be assumed that this is in fact the case, and the structures of morphogenetic fields will henceforth be referred to as *probability structures*.¹⁷

So far, quantum resonance bears strong similarities to the concept of morphic resonance—both perspectives include complex systems operating through resonance as identities of probability.¹⁸ On the other hand, formative causation only operates in linear time and proposes no complement (i.e., past systems influence future systems—not vice versa). In addition, the reality perspective behind Sheldrake's hypothesis is unclear. Morphogenetic fields are “neither a type of mass nor energy”¹⁹ and although a similarity exists, a strong distinction is made between morphic resonance and energetic (or mechanical) resonance.

The idea of a process whereby the forms of previous systems influence the morphogenesis of subsequent similar systems is difficult to express in terms of existing concepts. The only way to proceed is by means of analogy.

The physical analogy which seems most appropriate is that of *resonance*. Energetic resonance occurs when a system is acted on by an alternating force which coincides with its natural frequency of vibration.

...A ‘resonant’ effect of form upon form across space and time would resemble energetic resonance in its selectivity, but it could not be accounted for in terms of any of the known types of resonance, nor would it involve a transmission of energy. In order to distinguish it from energetic resonance, this process will be called morphic resonance.²⁰

I suggest that the hypothesis of formative causation may describe the linear process of the alpha aspect in quantum resonance theory without the omega aspect represented. If this is the case, quantum resonance theory may shed new light on decades of Sheldrake's brilliant work. Perhaps there's a more substantial connection between energetic resonance and morphic resonance than Sheldrake appears to expect. In a quantum resonance interpretation, the fundamental identities

¹⁶ Sheldrake (1981), p. 71.

¹⁷ *Ibid.*, p. 83.

¹⁸ Author's note: for the record, I discovered Sheldrake's book (and ideas) in late 1999 after completing [The Quantum Resonance: A Theory of Life](#). (On reflection, resonance could have influenced some of my ideas.)

¹⁹ *Ibid.*, p. 96.

²⁰ *Ibid.*, p. 95.

of physics manifest from an interconnected and living structure just as they do in biology—the mystery behind the differences leads to questions regarding the perspective. In theory, the exploration of quantum physics reveals more than the properties of inanimate identities—especially regarding consciousness and the role of the observer. Although these implications may be hard for the reader to swallow, this exploration may be describing our first contact with a greater level of life (with respect to our perspective).²¹ Quantum strings exist as probability structures and resonance is involved at a fundamental level. Consider:

Each elementary particle is composed of a single string—this is, each particle *is* a single string—and all strings are absolutely identical. Differences between the particles arise because their respective strings undergo different resonant vibrational patterns. What appear to be different elementary particles are actually different ‘notes’ on a fundamental string. The universe—being composed of an enormous number of these vibrating strings—is akin to a cosmic symphony.²²

One final example of resonance remains in this essay: psychological resonance. The proper term comes from the context of psychotherapy where it describes a resonance state that may be fostered and shared between the counselor and client. Watkins defined the phenomenon in the following way:

Psychological resonance is an experience of which all people are capable, although some more than others. Since we are concerned here with the psychotherapeutic situation, let us define it as that inner experience within the therapist during which he (she) co-feels (co-enjoys, co-suffers) and co-understands with his (her) patient, though in mini form.²³

Also in the context of psychotherapy, Sprinkle advanced the concepts behind psychological resonance, adding the holographic view of reality that has since been increasingly accepted²⁴ (and is necessarily implied in quantum resonance theory).²⁵

The concept of psychological resonance serves as the basic experience in an emerging model of counseling interactions. Examples of counseling sessions are presented to illustrate the procedures for relaxing the body deeply; focusing

²¹ In theory, the fact that the observable material universe reflects antiresonance (entropy) relates to these perceptions *remaining* alpha expressions in relation to us. Also in theory, a collective human bias toward alpha criteria for validating reality would be involved. However, this discussion must await another time.

²² Greene, B. (1999), The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory, New York: W. W. Norton & Company, p. 146.

²³ Watkins, J. G. (1978), The therapeutic self: Developing resonance—key to effective relationships, New York: Human Sciences Press, p. 23.

²⁴ Wilber, K. (Ed.) (1982), The Holographic Paradigm and Other Paradoxes: Exploring the Leading Edge of Science, Boulder, CO: Shambhala; also M. Talbot (1991), The Holographic Universe, New York: Harper Collins Publishers.

²⁵ Keener (1999), p. 12.

awareness on subconscious mind or inner states; allowing images, thoughts, and feelings to form in the conscious mind; and disclosing and discussing information from the inner states of consciousness. The model gains support from the holographic view of science and reality.²⁶

Outside the psychotherapeutic context, there is no good reason to disqualify psychological resonance phenomena in general between individuals and groups in other areas of human life (including emotional, cognitive, and behavioral aspects)—*and let's not forget other forms of life*. Furthermore, evidence discussed in this essay, in addition to quantum resonance interpretation, suggests the big picture behind resonance phenomena may include all areas of experience.

SOME CLOSING THOUGHTS

There isn't enough to really conclude anything here, so let's summarize with pure speculation. According to quantum resonance theory, resonance involves the association of different yet overlapping identities wherein common resonance frequencies are intensified (or maximized). At (or during) resonance, the union of the participant identities becomes a collective that is more than the sum of its individuals (i.e., a gestalt). Furthermore, the principle of resonance reflects health and the principle of life whereas antiresonance reflects unhealth and the principle of death. Antiresonance may resemble the concept of 'evil'—however, the terms are unrelated in this context. Health is a homeorhetic balance of complements, and so “each collective self-moment regulates its own relative parts”²⁷ using both complementary forces in proper measure.

It is quite significant that the collective of a quantum resonance identity is implicit (or hidden) from a peer perspective. A quantum resonance identity experiences its own collective identity though implicit boundaries rather than explicit ones, and this poses an interesting implication for any description of healthy behavior: healthy regulation cannot be achieved from the outside. Each individual of a given collective will vary to some degree, bounded within a probability distribution. Healthy regulation requires that each individual maintain its own inner resonance with respect to the collective (of any given context). In terms of human psychology, there's a clear message here: be true to yourself—honor your resonance. And regarding the big picture, the interconnected web of life reminds us to define 'ourselves' in expansive terms. As eloquently expressed in the words of a modern musical artist:

One with the earth
 With the sky
 One with everything in life
 I believe it will start with conviction of the heart²⁸

²⁶ Sprinkle, R. L. (1985), *Psychological resonance: A holographic model of counseling*, Journal of Counseling and Development, 64 (3), p. 206. (The entire article includes pp. 206-208.)

²⁷ Keener (2000), *Quantum resonance theory, Heisenberg's uncertainty principle, central tendency and the golden mean*, paragraph 11.

²⁸ Loggins, K. & Thomas G. (1997), *Conviction of the Heart, Yesterday, Today, Tomorrow: The Greatest Hits of Kenny Loggins*, Columbia Records.