

# The Scientific Foundations of the Milana Compatibility Report

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*Not only is the universe stranger than we imagine, it is stranger than we can imagine.*

Sir Arthur Eddington, astronomer, physicist, mathematician (1882 - 1944)

## The Scientific Evidence for Cosmic Resonance

The Milana Compatibility Report identifies the cosmic resonances that occur between two people and describes what they mean. A cosmic resonance is similar to the astrological idea that there is a relationship between the positions of celestial bodies and our lives. **There are two big differences between astrology and cosmic resonance: (1) Astrology is a collection of beliefs that are not supported by modern scientific research methods, and cosmic resonance is supported by very rigorous modern research studies, and (2) Astrology is not based on ideas that are consistent with modern scientific concepts, and cosmic resonance is much more closely aligned with modern scientific ideas.**

The concept of cosmic resonance can sound so mystical and fantastic that some people have an a priori assumption that cosmic resonances cannot possibly actually exist. However, **cosmic resonance is no stranger than superstring theory and is not as strange as ideas like quantum entanglement**, which we discuss later. If you can suspend feelings of incredulity until you have finished reading this paper, you are likely to find that what at first sounds bizarre or foolish is scientifically substantiated with good levels of confidence and is not as far-fetched as it first seems.

A cosmic resonance is similar to a musical note or sound wave. Each note and each color have their own frequency. Some sound frequencies combine together nicely. For example, if you play the notes C, E and G you have a C Major chord. If you play E-flat instead of E, then you have a C Minor chord. Similarly, there are various cosmic frequencies that combine together in various ways. Later we will describe more details about cosmic resonance, but let's dive right into the evidence that cosmic resonance is a real thing. A hundred pounds of theory are not worth as much as an ounce of evidence, so let's look at the evidence first.

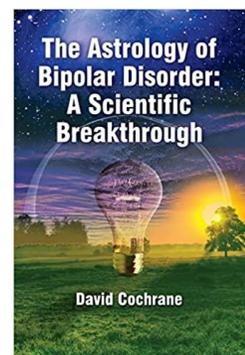
In Table 1 we see a list of cosmic frequencies, a reference to studies that support the existence of the cosmic frequency, and a brief description of the effect of the frequency. As you can see,

cosmic frequencies have a number and are given names like “7-Vibration” or “11-Vibration”. We also sometimes abbreviate this as “7-Vibe” or “11-Vibe” and in writing we sometimes express this as “7V” or “11V”. The number refers to the number of waves that exist within a circular band of the sky where the “wandering stars” (planets) travel.

Table 1. A Few Fundamental Cosmic Vibrations (There are thousands.)

Vibration	Planet that Produces Extreme Effects	Research Studies on This Vibe	Impact of the Vibe
7	Saturn	Athletes, Bipolar Disorder, Introversion-Extraversion, Extreme Cases of Vibes, Criminals, Marriages	Introversion, Self-Discipline, Focus
11	Uranus	Musicians, Accidents, Bipolar Disorder, Extreme Cases of Vibes, Marriages	Restless, need to move and see changes
13	Jupiter	Bipolar Disorder, Cult Leaders, Extreme Cases of Vibes, Marriages	Need to find one’s individual calling, need to stand out from the crowd
17	(there are not 1 or 2 planets that stand out)	Actors, Extreme Cases of Vibes	Empathy, reaching out from what is familiar to feel what others experience.

The research on bipolar disorder is the most comprehensive research so far, and the results of this research are stunning. The bipolar disorder research is historical in that it establishes the existence of cosmic resonance with very high confidence. A book was written to present the research in great detail and there is also a series of free YouTube videos on the bipolar disorder research. The bipolar disorder research was conducted by myself and Marriage and Family Therapist Gisele Terry over several years. The research culminated in a strict hypothesis test. **A strict hypothesis test** is the pinnacle of this kind of research. In a strict hypothesis test: **(1)** The researcher specifies exactly what is expected in the experimental group. In this research the experimental group is the people with bipolar disorder. The cosmic resonances that are expected are specified in detail so there is absolutely no ambiguity about what the “signature” for bipolar disorder vulnerability is. **(2)** The experimental group is new data. The



researcher has no prior information about this group of people with bipolar disorder. **(3)** There is a control group, i.e., people who do not have bipolar disorder. In medical research the control group needs to be matched to the experimental group on things like age, gender and many other variables or statistical techniques are used to account for differences in the group. In the research on bipolar disorder the control group has extremely similar planetary configurations as the experimental group. This is achieved by shuffling the dates, time and places of birth of the people in the experimental group. This shuffled control group is artificially made to be so similar to the experimental group that any difference between the experimental group and control group is almost certainly not due to extraneous variables. In statistical terminology we say that the probability of a Type 1 error (false positive) is high, but our concern is to prevent a Type 1 error in order to have confidence that cosmic resonance exists if it is detected in the research. **(4)** The experimental group is sampled properly, so that we are confident that the people in the experimental group are representative of the population of people with bipolar disorder.

Table 2 presents the results of an elegant model that was built using 912 cases of bipolar disorder that were collected by the French researchers Michel and Françoise Gauquelin. In Table 3 we will see the results of the hypothesis test, but the way in which the model is built is also important and also affects our confidence levels in the findings. The 912 people in this study have recorded birth times and birth places so we are able to determine the cosmic resonances at the time that they were born with great accuracy. The people were hospitalized for bipolar disorder so they were diagnosed with a severe case. At the time of the study bipolar disorder was called manic depression and later was changed to bipolar disorder, so to be more technically accurate, they were diagnosed with manic depression. It is an existing database so no selection bias can be involved.

The model that was developed is elegant for several reasons, one of which is that the 6 components are consistent with previous research. If the variables used are not based on previous research there is a much greater probability of overfitting. From a statistical point of view it is very easy to find a collection of variables that correlate with an outcome variable. In statistical terminology the bipolar disorder formula is called a regression model. In a regression model typically there are many variables that are correlated with one outcome variable. There are millions of astronomical variables that can be put in the regression model and many of them by random chance will happen to correlate with the outcome variable. You can see how the information in Table 2 builds directly on other research shown in Table 1. For example, research on a database of people who provided their birth data and also took a standard psychological introversion-extraversion assessment test found that Saturn in 7-Vibe or 8-Vibe incline towards introversion. What we found for people with BD is that they have both the markers for

introversion and withdrawal AND markers for exuberance and mania, as determined from previous research. The 6<sup>th</sup> variable is a zodiac sign impact of Leo because previous research showed that Leo is inclined to be more aware of their personal situation than other signs, and this can manifest with symptoms like self-consciousness, shame or showing off. Astrologers have recognized some, but not all, of these tendencies. The self-consciousness theoretically could exacerbate the stress of the introverted circumspect side of the person at war with the highly social, exuberant and attention-getting side of themselves. Leo in 7-Vibe would theoretically incline to self-doubt and strong self-assessment. This slight use of zodiac signs is not necessary because the statistical significance of the model does not change noticeably by removing it and the interpretation of the zodiac sign is very different from the way in which zodiac signs are understood by the great majority of astrologers. The rules used by astrologers are not confirmed by astrologers but there is a vague similarity to what astrologers do so the astrological belief systems are almost completely unsupported and irrelevant to this research but not 100% irrelevant.

Because the model built with the 912 cases builds upon previous ideas and arbitrary and inconsistent astrological rules were avoided, this model is not a first attempt to assess the validity of these ideas. There is a very long history of personal observations, pilot studies and controlled research studies that support these ideas. The model was built by applying what was learned in previous research to a new context of assessing cosmic resonance that is associated with bipolar disorder.

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Table 2, Statistical results of comparing the BD Vulnerability Scores for the 912 Cases of BD and the 912 cases in the shuffled control group.

<u>Component</u>	<u>p-value</u>	<u>Effect Size</u>
1. Saturn 7-Vibration Depression:	p < .02	
2. Saturn 8-Vibration Depression:	p < .05	
1&2. Saturn 7-Vibe 7 & 8-Vibe Depression:	p < .01	
3. Uranus 11-Vibration Mania:	p < .05	
4. Jupiter 13-Vibration Grandiosity:	ns	
5. Jupiter 8-Vibration Grandiosity	ns	
6. Leo Sun and Moon in Natal and 7-Vibe:	p < .02	
4&5. Jupiter 8-Vibe and 13-Vibration:	p < .05	
3&4&5. Uranus 11V & Jupiter 8 & 13 Vibe:	p < .01	
1&2&3&4&5&6. All 6 Components:	p < .000001	.10

Notes: P-values are 2-sided. Effect Size was calculated only for all 6 components.

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The model that was built has 6 major components. In genetics research there can be hundreds, and even thousands, of components. In genetics research on obesity and some other conditions, each of the thousands of components contributes an almost negligible contribution to being vulnerable to obesity. The combination of all of these components predicts in a small, but reliable, way to the vulnerability to become obese. Our model has 6 components so is much simpler than some of the genetics models, but the concept is the same: there are different contributors to the outcome variable.

Although the p-value of  $p < .000001$  strongly indicates that cosmic resonance is able to identify people who are more prone to bipolar disorder, the Effect Size, measured as the percent increase in the mean Bipolar Disorder Vulnerability score is only 10%. Because the sample size of 912 is large, the research is able to discriminate very well between the two groups. Even though a 10% improvement in the ability to identify people who are prone to bipolar disorder is small, it can be helpful and meaningful.

The results of the strict hypothesis test are given in Table 3. The data for 2021 is from the book and the data for 2024 is from an updated hypothesis test conducted in 2024. The updated hypothesis test includes additional data found in the online AstroDatabank and some minor corrections. The last line of Table 2 is also included for easy comparison of the hypothesis test results to the results from the training data.

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Table 3. Effect Sizes and P-Values for the Strict Hypothesis Test, Updated Hypothesis Test and the Training Data.

<u>Data</u>	<u>n</u>	<u>Effect Size</u>	<u>p-value</u>
2024 All Data	110	.12	< .03 *
2024 C accuracy minimum	101	.11	< .05 *
2024 B accuracy minimum	85	.08	< .18
2024 A accuracy minimum	73	.07	< .26
2024 AA accuracy only	38	.19	< .03 *
2021 All Data	79	.13	<.20
2021 Training Data	912	.10	< .000001 *

Notes: P-values are 2-sided. Asterisk indicates  $< .05$ , which is a standard cutoff.

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The Effect Size of the research on 912 training data is .10. The Effect Size for all of the test data in 2021 is .13 and for the data in 2024 it is .12. The values of .12 and .13 are almost identical, showing that the additional data and corrections in 2024 made little difference in the effect size. Although the Effect Sizes are almost identical the increase in the sample size from 79 to 110 contributed to the p-value improvement from  $<.20$  to  $<.03$ . This improvement is dramatic and produces a statistically significant result. **Extraordinarily impressive is that the Effect Size of the test data is better than the Effect Size of the training data! This is impressive because normally test data produces worse results, not better results, than the training data. These results give us great confidence that cosmic resonance is a real phenomenon.**

## Cosmic Resonance in Marriage Relationships

Having established with very high confidence that cosmic resonance exists, various applications of this new technology can be developed and these applications can serve two purposes: solve previously unsolved problems and provide data for improving a Cosmic Resonance Model for the particular application.

Marriage relationships are an excellent area to investigate because Michel and Françoise Gauquelin collected over 20,000 birth data of married couples. This birth data includes the birth times recorded at the hospital where they were born. These married couples also had at least one child and the birth data of the children was also obtained. This data is a goldmine for researchers! We applied what was learned from the bipolar disorder research and other research and developed a Cosmic Resonance Formula for

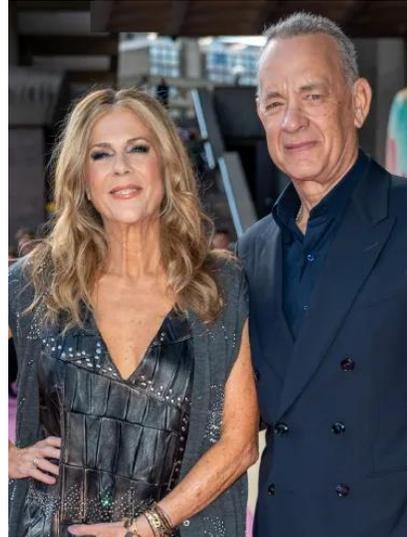


Michel and Françoise Gauquelin

Marriage that has a p-value of  $p < .001$ . Critically important is that this formula includes only cosmic resonances that are consistent with findings from previous research and the formula is internally consistent and what researchers refer to as very elegant. Unlike the superstitious astrological beliefs, this formula for marriage attraction is data driven and based on very sophisticated research and very conservative parameters. The term “conservative parameters” means that every effort was made to keep the probability of Type 1 errors extremely low while allowing many Type 2 errors to occur. In plain English this means that the research is designed to be very confident that what is found will be replicated in new studies. There are also very likely additional indicators of marriage in the data that were not detected because of the very conservative approach taken to the research. In short, we strive to avoid false positives at the expense of obtaining many false negatives. We have high confidence that what was found can be confirmed in future research and that more important variables will be found in the future.

Some details of the cosmic resonances that draw people together to get married are given in a free YouTube video. Some details remain proprietary so that enterprises that utilize this new technology can leverage this information to have an advantage over their competitors.

Rather than go through the technical details of the cosmic resonances involved, which are already presented in a YouTube video, below is a demonstration of a cosmic resonance in a married couple. Seeing this example give you an intuitive and realistic sense of what cosmic resonance in a romantic or marriage relationship actually looks like.



The famous American actors Tom Hanks and Rita Wilson got married in 1988. Marriages between Hollywood superstars rarely last more than a few years before there are great tensions and divorce is extremely common. Hanks and Wilson are a shining exception to the rule. The love and appreciation that they show for each other is clearly sincere and deep. In addition to their personal values, character and psychological health, is there some special chemistry between them that can be identified? Yes, there is and there is strong support from statistical data analysis to support this claim. Before we look at the scientific support, let's learn what this cosmic resonance is by seeing examples of it between Tom and Rita.

Figure 1 shows the Sun and Moon positions when Tom Hanks and Rita Wilson were born. Fortunately, we have recorded birth times for both people so these planetary positions are very accurate. Even a change in birth time of a few hours for either one of them would change the details of what we are going to notice about the alignment of these planetary positions.

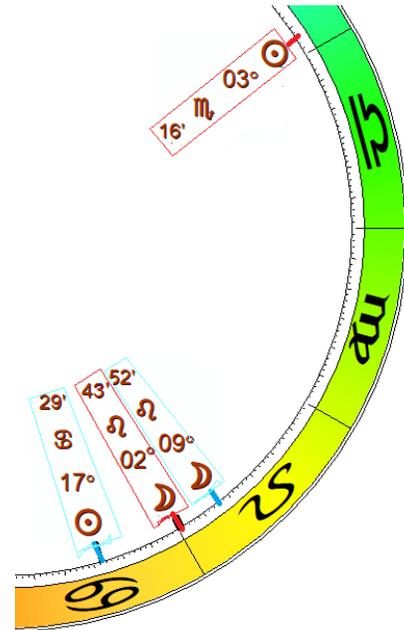


Figure 1. Sun and Moon positions at birth. Blue = Tom Hanks and Red = Rita Wilson

The planets with blue markers indicate the planetary positions when Tom was born. The red markers indicate planetary positions when Rita was born. Astrologers look at these planetary positions and note things like both Moon positions are in Leo and both Sun positions are in water signs. However, the data analysis of over 20,000 married couples shows that married couples are no more likely to have planets in the same zodiac sign or in the same element (such as water signs) than happens randomly! There is no support from analyzing actual data that the astrological rules are valid. They are just beliefs that astrologers have that are reinforced by their ability to see patterns and relationships that appear important to them but are actually just random relationships. However, **there are clear and striking resonances that exist in these planetary positions and the data analysis indicates that these resonances draw two people together to get married.** Without the use of sophisticated pattern recognition software these relationships are difficult to see. Large databases with software written to detect these specific patterns have confirmed that these planetary configurations occur more in married couples than unmarried individuals.

In Figure 2 we see that the Sun and Moon when Rita was born are separated by  $\frac{1}{4}$  of a circle, or, in other words, 90 degrees. She was born at the 3<sup>rd</sup> quarter of the lunar cycle with the Moon halfway on its return from Full Moon back to New Moon. Essential for these resonances is that the Sun and Moon are separated by almost precisely 90 degrees. They are 99.4% (shown as “.994” in Figure 2) exact, or, conversely, we can say that they are less than 1% from being in a perfect square relationship of 90 degrees.

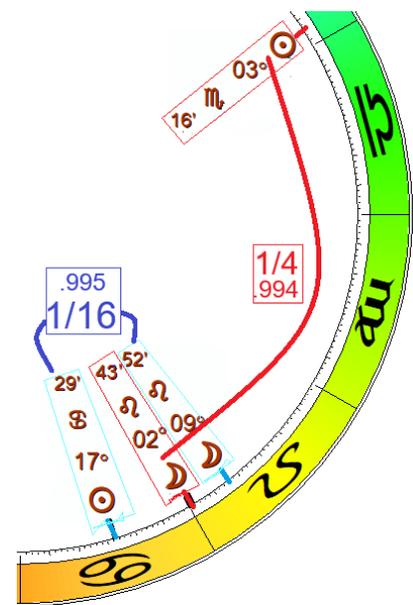


Figure 2. Both of them have Sun and Moon in "octave vibes"

In Resonance Astrology we note that Tom and Rita were born with the Sun and Moon in resonance with each other. When you press a guitar string to make the length of the string half as long, the note played is an octave higher. Similarly, Tom Hanks was born with the Sun and Moon  $\frac{1}{4}$  of the distance that they were in when Rita was born. Tom was born with a separation of the Sun and Moon of almost exactly  $22\frac{1}{2}$  degrees, which is  $\frac{1}{16}$  of a circle, and the Sun and Moon for Rita is 4 times longer at almost exactly 90 degrees. Analysis of databases and application with clients confirms that a kind of vibrational resonance can bring these two people together.

As we analyze the pattern in more detail, we notice even more resonance. Rita's Moon is  $\frac{2}{3}$  of the distance between Tom's Sun and Moon. We see this notated in Figure 3. Rita's Moon is almost exactly  $\frac{1}{24}$  of a circle from Tom's Sun. The fraction  $\frac{1}{24}$  is  $\frac{2}{3}$  of the  $\frac{1}{16}$  angular distance that separates the Tom's Sun and Moon. Just as in music, this is clear and straightforward overtone.

As mentioned earlier, the principles of Resonance Astrology are very simple. The details of how it works out in actual life requires sophisticated software to perform the calculations and identify the resonant planetary configurations. A resonance like this between the Sun and Moon is extremely important. For romantic and marriage relationships, the planet Venus is also important. Students study for years to learn the details of how these resonances function in a person's life and how data analytics and strict adherence to the principles of an Evidence-Based Practice are essential for this new technology.

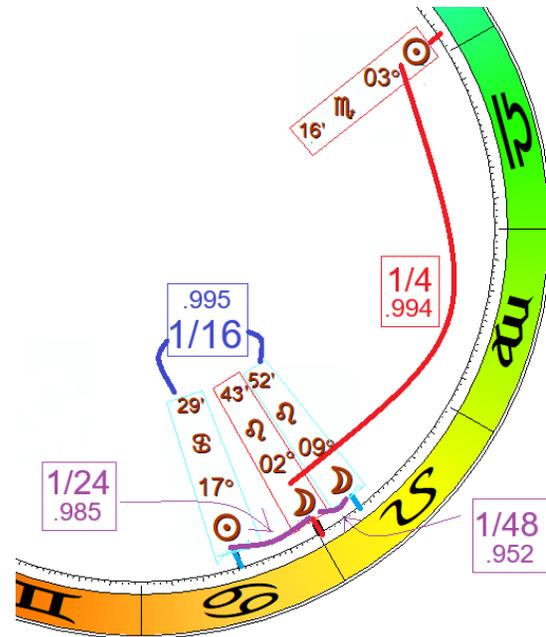


Figure 3. There are also overtone vibes between the planets!

## Failure of Superstitious Astrological Beliefs

An almost universal axiom of astrological compatibility is that people with planets in compatible zodiac signs are likely to have harmonious relationships. Harmonious zodiac signs are signs of the same element. For example, Gemini, Libra and Aquarius are air signs so these signs are inclined to harmonize well with each other and make for more satisfying relationships. There are many ways to compare zodiac signs. You can, for example, compare Sun and Moon signs, look at the Sun, Moon and rising signs, see if the Venus signs are compatible or compare Venus and Mars signs to each other. An exhaustive analysis of the zodiac sign compatibility of the married couples was conducted. Many different possible combinations were tested to see if Sun sign, Moon sign, Husband's Sun to Wife's Moon or vice versa and similarly for Venus and Mars. By trying many possible zodiac sign combinations, it gives standard astrology a good chance of finding at least one confirmation of this well-established theory. Some dating sites have even started offering options to see zodiac signs compatibility. The research shows that none of the zodiac sign compatibility rules were confirmed in the database of over 20,000 married couples. Astrologers may search for excuses, such as perhaps people are not good at identifying a compatible mate, or the cultural setting of this data is different from other cultural settings, etc.

These are just excuses for denying what the data is telling us. Even if married couples had only an extremely slight inclination to be attracted to a compatible mate it would be detected with an enormous sample size of over 20,000 married couples. To give an idea of the way that the data was visualized and analyzed, Table 4 shows Moon signs in the same element where the occurrence of the combinations is 20% or more above or below the control group. There are 3 cases where the values are 20% or higher: Husband's Moon in Gemini and wife's Moon in Libra (water), Husband's Moon in Cancer and wife's Moon in Pisces (water) and Husband's Moon in Capricorn and wife's Moon in Taurus (earth). These 3 cases are just barely at the cutoff of 20%. There are 2 cases where compatible Moon signs occur 20% or less than in the control group and one of the values is much more extreme than the others: Husband's Moon in Leo and wife's Moon in Aries (fire). When viewing all of the combinations Sun-Sun, Sun-Moon, Venus-Venus, Mars-Mars and Venus-Mars, the results appear to be completely random.

In a relentless search to find any relationship of zodiac signs, a very small and statistically insignificant tendency was found for some planets to be in signs that are quincunx to each other! These are regarded by astrologers as very bad combinations.

The conclusion is obvious: zodiac signs are not helpful in understanding which people are drawn to marry each other. The cosmic resonance patterns, on the other hand occur with  $p < .001$ . **There is no evidence from modern research methods to support the belief that zodiac signs are important in marriage relationships and there is strong evidence that cosmic resonance is important in marriage relationships.**

Table 4: Moon Sign Comparisons. The columns are for the wife and the row are for the husband. Shown are only Moon sign comparisons that are at least 20% (.20) above or below the mean of the control group. For all comparisons of planets in zodiac signs the results appear to be completely random.

	Ari	Tau	Gem	Can	Leo	Vir	Lib	Sco	Sag	Cap	Aqu	Pis
Ari	---				---				---			
Tau		---				---				---		
Gem			---				.21				---	
Can				---				---				.20
Leo	-.31				---				---			
Vir		---				---				---		
Lib			---				---				---	
Sco				---				---				---
Sag	-.21				---				---			
Cap		.20				---				---		

Aqu			---				---				---	
Pis				---				---				---

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## Combining Insights from Cosmic Resonance with Insights from Psychological Research

When we combine the insights from Cosmic Resonance research with the findings from psychological research, we reach this conclusion: Cosmic resonance provides match makers with insights into the forces that bring the two people together, the themes that are likely to arise in the relationship, and ways to communicate and bond with the person that are effective and build mutual understanding.

Below is a more detailed look into what psychological research tells us about happiness in marriage, and we will summarize some key points here so that you just read the conclusions here if you wish and skip the rest of this document if you wish.

Some basic similarities in values, goals, education and age correlate well with success and happiness in marriage. If one person values luxury and material success and the other prefers a simple, humble and more minimalist life style, the likelihood of happiness in marriage goes down. This is a statistical tendency and is not true in every case. Similarly, if one person has a PhD or other doctorate degree and the other only finished high school and did not pursue academic studies independently, the likelihood of success in the marriage goes down.

That these basic similarities are conducive to success in marriage is probably obvious to most people. On dating services people usually look for more common interests like an interest in the same hobbies, activities and interests. People will spend hours looking at potential partners, searching for that special match. However, the research shows that most of these criteria are irrelevant to success in marriage.

What is important is listening, responding and showing that you care about each other.

The information on cosmic resonance and the information from psychological research integrate together beautifully to enable match makers to assist people to succeed in their relationships. For example, the cosmic resonance evaluation may show that there is a very strong potential for an intensely romantic and sexual attraction. If the two people are even moderately attractive to each other, this energy kicks in to make an intense love affair. However, psychological research

shows that this very desirable quality of being madly in love with each other does not predict long-term happiness in the relationship! The thing that many people are seeking does not give them what they really want: a loving, happy and satisfying relationship. The Cosmic Resonance report lets you know that issues of jealousy, of feeling an aching need for the partner and for reassurance that your partner desires you at least half as much as you desire your partner often puts a strain on the relationship and causes the fire to burn out and fizzle. This situation is like playing with fire and eventually both people get burned, with hurt feelings, anger and disappointment. If you understand the nature of the relationship, how it relates to the potential for a long-lasting happy relationship and what you need to do to make the relationship work, you have a huge advantage of going into the relationship and finding out that you are playing with fire after you already have unintentionally started hurting each other.

The sections below are optional reading in case you are interested in diving into more details about the psychological research and what this tells us about how we can help people find happiness in a romantic relationship.

## **Optional Reading: The Limits of Compatibility Analysis Using Insights from Psychological Research**

Research psychologists like John and Julie Gottman have done extensive longitudinal studies to determine what ingredients are needed to make happy lasting romantic relationships and marriages. How do we find that special someone who is like a soul mate that we deeply love, appreciate and desire?

The research provides some clear and unsettling answers. Other than some basic agreement about life values, beliefs and goals, the magic sauce that makes a relationship special has more to do with how the two people treat each other than any special psychological similarity or complementary qualities. Even a hot, sizzling attraction is not an indicator of success or failure in a relationship. As



long as your education and experiences are close enough that you can communicate with each other and you have roughly similar perspectives on life goals and values, that is sufficient. If you live in a populated area there are likely many hundreds of suitable life partners not far from you. The research indicates that marital happiness has more to do with how we listen, respond and behave towards our partner than any special qualities about them. In fact, people bond romantically because their paths cross, and they interact enough for the connection to grow, and they have the will and the relationship skills to work through conflicts. This may sound less

romantic than finding your one true soul mate, but this is what the research shows.

These findings present some challenges for matchmakers. Without some kind of breakthrough discovery that shows that there is some kind of psychological profile, physical chemistry like advancements in understanding pheromones or other method that indicates the likelihood of success in a romantic relationship, there are big limitations in the ability to identify an ideal mate. As John Gottman stated in an interview with YouTube interviewer Steven Bartlett, if two people stare at each other for a long time and begin to talk, there is a fairly good chance that their connection can become romantic, and he cannot predict with any confidence who that will be with. On the other hand, once he sees how two people relate to each other, he can predict with high confidence whether they will be happy together in the future. Some dating sites have tried using cutting edge discoveries in neuroscience, biochemistry and anthropological research, but reviews of websites that have implemented these methods are far from stellar.

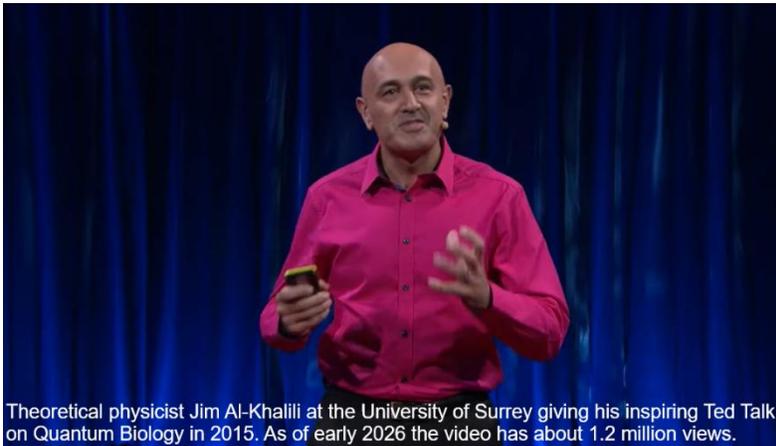


Helen Fisher, pioneer in understanding romantic and sexual fulfillment.

## **Optional Reading: Quantum Biology and the New Findings that are Consistent with Cosmic Resonance**

One a priori criticism of Cosmic Resonance is that modern science has shown that something like a relationship between the patterns in the cosmos and the patterns in our lives is pure fantasy. This view overlooks the realities of what scientists have discovered. Some claims of physicists sound like magical thinking at least as much, if not more, than the concept of Cosmic Resonance. Over 100 years ago Einstein said that objects experience time differently if they are moving at high speeds. This was demonstrated in the Hafele-Keating experiment in 1971, where scientists put an atomic clock on an airplane flying around the world and atomic clock recorded time differently from atomic clocks on the ground. It can sound like magical thinking that we can change the experience of time just by moving quickly. Much more magical to most of us is quantum entanglement. “Quantum entanglement occurs when two subatomic particles become linked in such a way that their properties remain connected, no matter how far apart they are. A change to one particle seems to instantaneously influence the other, even if they are separated by billions of light-years.” (<https://www.azoquantum.com/Article.aspx?ArticleID=538>). Although we may be inclined to think that science is logical and causal, this fundamental principle in physics is instantaneous and seemingly non-causal.

Quantum biology brings this “magical thinking” into the realm of human experience and the experience of other living things, and not just in an abstract realm of inanimate subatomic particles. Quantum biology proposes that our human experiences are highly influenced by quantumly entangled chemical reactions. Our experiences are not limited to simple linear causal relationships. These new discoveries in quantum biology show that quantum entanglement is not just some property of things that is unrelated to our lives. This seemingly magical world of quantum entanglement is necessary for human experience.



Theoretical physicist Jim Al-Khalili at the University of Surrey giving his inspiring Ted Talk on Quantum Biology in 2015. As of early 2026 the video has about 1.2 million views.

One area in which quantum biology has developed is in discovering how birds migrate. Birds are able to migrate long distances only because “a bird’s compass relies on subtle, fundamentally quantum effects in short-lived molecular fragments, known as radical pairs, formed photochemically in its eyes. That is, the creatures appear to be able to “see” Earth’s magnetic field lines and use that information to chart a course between their breeding and wintering grounds.”

(<https://www.scientificamerican.com/article/how-migrating-birds-use-quantum-effects-to-navigate>). These quantum effects are spin-correlated quantum states. Current thinking in quantum biology is that short-lived quantum entanglement is a necessary component of a bird’s ability to migrate. Ongoing research is discovering very likely quantum entanglement involved in other activities in various living things, including processes as fundamental as photosynthesis.



Thomas Kuhn (1922 - 1996)

Quantum biology is a paradigm shift. All living things participate in what previously would typically be regarded as only magical thinking. In his classic celebrate book *The Structure of Scientific Revolutions* (1970) Thomas Kuhn quotes one of the most brilliant thinkers of all time, Max Planck, that “a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.”

We are now in the early stages of this massive change in understanding the human mind.

Scientists are now claiming that quantum entanglement is not rare. In fact, according to Ubiquitous Quantum Field Theory (QFT) quantum entanglement is pervasive! Further intensifying this revolution in our understanding of the nature of living things and the human mind are the ubiquitous fractal patterns that are found in nature. In short, we live in a world of pervasive quantum entanglement and fractal relationships. Matryoshka dolls, the Russian nested dolls, come to mind as a way of visualizing human experience. The individual human experience is embedded in the context of our genetic constitution, epigenetics, the social fabric, the interconnectedness of all things and the pervasive fractal patterns.



## **Optional Reading: The Next Horizon After Quantum Biology**

While most of us have barely noticed the paradigm shift put into motion by quantum biology, which brings the realization that the magical macro-world of relativity theory and the magical micro-world of quantum theory are now joined by a third magical world of quantum biology. Note that I am using the term “magical” loosely here. By magical I mean outside the scope of simple common sense linear thinking. These scientific breakthroughs are replicable insights into the behavior of nonliving and living things. These insights are the opposite of “magical” in that they are very carefully observed and rigorously tested with precision and care that far exceeds the kind of loose evidence that most of us use to support decisions in our daily lives.

The accumulation of all of these developments in quantum biology and fractal theory almost gives an impression that the superstitious belief in astrology could have some validity. However, what separates astrology from science is the complete lack of empirical data to support the astrological beliefs, which is diametrically opposed to the extremely rigorous requirements of modern science.

Periodically someone applies modern research methods to see if Aries really is pioneering, Taurus is stubborn or that Mars square Uranus inclines to a pugilistic demeanor and accidents. Michel Gauquelin, with the assistance of his wife Françoise, is one of the most notable of these researchers. Many astrologers have conceded defeat and they conclude that astrology is a form of divination and a source of deriving meaning rather than giving concrete information. This is a hotly contested philosophical issue among professional



Michel and Françoise Gauquelin

astrologers, with most astrologers in the west content with their personal experiences and traditions and allowing for the possibility that scientific support may one day be achieved.

## Optional Reading: Cosmic Resonance is a Mathematical Model, just Like the Laws of Planetary Motion and Gravity

Cosmic Resonance is based on principles that are reminiscent of the kinds of resonances that we hear when you pluck guitar strings or when you play the piano and the piano keys cause a hammer to strike a string. **The principles behind this extremely innovative form of astrology are simple and these principles are very similar to principles used in the sciences rather than the rules used by astrologers.** These new rules are a mathematical model. When **Kepler** discovered the 3 laws of planetary motion and when **Newton** discovered the law of gravity, what they discovered were also mathematical models. On 25 February 1693 Newton wrote in a letter to Richard Bentley “That gravity should be innate, inherent, and essential to matter, so that one body may act upon another at a distance through a vacuum, without the mediation of anything else, by and through which their action and force may be conveyed, is to me so great an absurdity that I believe no man who has in philosophical matters a competent faculty of thinking can ever fall into it.” Newton’s statement underscores the point that careful observations are more important than theory. **Newton** discovered a mathematical formula that determines how fast things fall to the Earth, but why this mathematical formula worked was very mysterious and, in fact, absurd. Similarly, the great physicist **Richard Feynman** said “I think I can safely say that nobody understands quantum mechanics.” (from *The Character of Physical Law*, Lecture 6: “Probability and Uncertainty — the Quantum Mechanical View of Nature”). These mathematical models predict behavior with extreme accuracy. For example, we can calculate the positions of planets with great accuracy using the discoveries of Kepler and Newton. We can calculate behavior of things in the physical world very accurately using the formulas of physics. Understanding why these formulas work is extraordinarily elusive. Accuracy of prediction is more important than theory. This new system of resonance astrology, fortunately, does include theories that are compelling and are consistent with ideas in physics. Far more important, however, is that the formulas are confirmed by rigorously conducted research that complies



Johannes Kepler, painting by Matthias Bernegger, 1627



Isaac Newton, painting by Sir Godfrey Kneller



Richard Feynman

with the high standards for academic research and the results of this research give very high confidence that these mathematical models accurately predict who is more likely to experience bipolar disorder and what themes and issues become highlighted in a relationship.

I have made over 800 tutorial videos that are free of charge and videos on a topic can be found using the search features provided at <https://www.SantinoMancuso.com/videos>. Now that we have a good appreciation of the importance of the mathematical models that have been developed through extensive and painstaking research, we are ready to learn what we mean by “cosmic resonance”.

## **Conclusion: The Rapid Pace of Technological Advancement**

I am a data scientist, but if you told me 10 years ago how Large Language Models would be easily accessed at very reasonable fees and give the kinds of quick responses to complex questions, I would have said that will not happen at least for another 100 years. Clearly my prediction has been proven wrong! It was not that long ago that the idea of telephones that let you see the other person as well as hear their voice was seen only science fiction movies about some far distant future time. The list of remarkable and largely unexpected developments is long and perhaps you are thinking of some additional ones.

Maybe we should not be so surprised that yet another unexpected breakthrough is made. Both astrologers and scientists have not yet embraced the discovery of Cosmic Resonance. The discovery of Cosmic Resonance thus far has not pleased the majority of astrologers because the rules are very different from the rules that astrologers use. Many scientists have assumed that this new discovery of Cosmic Resonance must be another case of the naïve superstitious thinking of astrologers. They assume that any claims of validation of anything that is similar to astrology must lack the careful, detailed rigorous analysis and endless hours of research needed to make paradigm-shifting discoveries. However, as the research continues and more discoveries are made and the confidence levels of research improve, the global use of Cosmic Resonance as a technology to be used in many applications is inevitable. When something works, it is scientifically confirmed and has useful applications, it can spread as rapidly as mobile phone use and LLM generative AI. Early adopters will have a head start. I am busy with colleagues analyzing more data and improving the models so that the applications of the models are more effective and helpful.