



Energy 4 Life Podcast

Biophoton Emission with Fritz-Albert Popp

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Harry Massey: Welcome to the SuperCharged Podcast, where we help you to enhance your energy, health and purpose.

Wendy Myers: Bioenergetics is truly the future of medicine.

Harry: Imagine having a body charged with energy and a mind quick as lightning. Is that a super hero? No. That's you, supercharged. We'll be talking to experts who have studied the physics of life so that you can have energy for life. Now, today is a very special podcast because, again, we are going to go back in time to the days where we were recording the Living Matrix movie. Traipsing around all of Europe, getting completely lost in the Baden mountains, and then we went across an airfield. It was a disused airfield-army base and there was this concrete bunker. Inside the concrete bunker it was very, very, very dark, but weirdly enough this was the center for biophoton research. The Institute of Biophotons. It was Institute ... actually it was the Popp Institute, run by Professor Popp. Now, it was particularly weird for me, because we were expecting, if you're going to be studying biophotons, for it to be a very light, energetic, wonderful building, but, of course, there is not much research for biophotons in the world. Unfortunately, for us, or unfortunately for Professor Popp, he had to do all of his research in basically what seemed like a bomb underground bunker. So, that was the setting. Now on that little cliffhanger, before we get into Professor Popp and biophotons and basically the interview that we did about 12 years ago with some additional commentary, I'm just going to update everyone on a few things. So this is an exciting year for us because we are launching Energy4Life this year, being 2019. So we have this amazing conference in October, where basically we're going to be unveiling sort of a new vision of how senses, wearables, all the NES type technology, the latest in how

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you get energy for life, like the latest in sort of health world thinking. We're basically going to be fusing all of that together within a new system, within a new client portal, a new scanner, a new app, new bio sync, et cetera, et cetera. So that's pretty, pretty cool. So I would say, I think our tickets are limited to about 90 people. So if you want those, I would get them fairly fast on the NES Health website, because it's going to be pretty exciting. Also, I just want to say about that, so we've been really, really fortunate to work with Niki Gratrix. She was one of the co-founders of the Chronic Fatigue Clinic in London, and which basically has become the most prominent chronic fatigue clinic in Europe. She's basically been working for the past year on this incredible course called Energy4Life, where it's basically a 26 unit course where she's looking at all the ways that you can get energy for life. She's fused it, basically, beautifully within the bioenergetic wellness system, so that all the various testing will be new tests, new screens, within that, and they're all being linked to various wearables, like Oura ring, like your watch, and then you scan it. We will be launching at the conference. All of this basically means that you as a client can basically be recommended precisely the sort of life changing habits that will be most prevalent to you now. Like, is your blood sugar unstable? Should you learn about blood sugar? What can you do about it? That will be really relevant for you in a particular moment. Should you be doing nice, less, and long exercise to recover tomorrow? Is your HRV off? Should you therefore spend some time doing box breathing or having longer breathing out, rather than breathing in? Basically, because we can integrate all of these different senses and all of the original NES scan, we're basically integrating the sort of full NES philosophy, with where a lot of the modern wearables and algorithms are going, and then integrating that to give basically clients a really seamless experience. So, there we go. Book that for October. I think the date is the 13th? Anyway, it's on neshealth.com, the exact date, and there will be notes in the show notes, no doubt, down below. All right. Let's just get into Popp. So, if you subscribe to this podcast, you're basically interested in having energy for life, and you're also highly curious about the energy fields in the body. And so, you're probably also familiar with the phrase "light bodies" as well. That can be a bit woo-woo, but in this case, it's not. So, if you saw the classical movie Cocoon, you may remember where the friendly aliens ... I'm not talking about you. I know you're listening alien ... strip off their human form and underneath their just beaming, bright light. Yup, that's a nice visual of a light body. Well in today's podcast, we're looking at the science behind how we, that is the humans among us ... Who's that? Okay ... really, are made up of light, down to the cellular, quantum level, and why this is important for our health. In order to have energy flow, your body needs to be charged with perfectly coherent light. That is, beams of photons at a constant frequency. Studies have shown people with cancer have less light, or less photons, in their body. The goal for all of us is to be beaming with healthy cells powered up by light, but at a perfectly balanced level, known as coherence. This means an optimal state between chaos and order. Now, a few years back while making our Living Matrix documentary ... It's still a good movie, I have to say. It's one of the ones I'm most proud of making, but ... well I



also really liked, well I liked making them all, but some of them were harder than others. Living Matrix was probably the easiest and turned out to be the best, most watched movie too.

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So anyway, a few years back, while making the Living Matrix movie documentary about the body field and energy medicine, I interviewed German Biophysicist Professor Fritz-Albert Popp. Now he's known for his work exploring biophotons. Now biophotons are ultraviolet and ultraweak light that emanate from all living systems, including humans. Now the biophotons in our cells function as regulators, or carriers of information. So biophoton emissions, they provide an ideal communication system for the transfer of information to many cells across our body. So, what are we talking about, the speed of light here? Just think faster. The speed of communication in the body just can't be explained by the old biochemical model. You've probably heard me say that before. It really cannot. So, in this podcast, Professor Popp is going to explain further how only photons can regulate the thousands of chemical reactions and the whole metabolism in our bodies, and in an orderly way. Professor Popp was the scientist who used a special machine to examine cancer patients and found that they had lost their natural periodic rhythms, as well as their coherence. The lines of internal communication were scrambled. In effect, he saw their light literally going out. Like, "Pop!" As in, Professor Popp. Now in contrast, he found healthy individuals had an exquisite coherence at the quantum level. He also examined the effects of stress. When we're stressed, the rate of light emissions goes up, when it actually needs to be at an equilibrium. Now according to these studies, health is a state of perfect subatomic communication, while ill health is a state of communication breakdown. We are ill when our waves are out of sync, and having coherent light is literally having good vibes. So, Popp even went on to use biophoton emissions as a tool for measuring the quality of food. The healthiest food had the lowest, and most coherent intensity of light. For example, in one experiment, he compared the light from free-range hens' eggs with that from penned-in, caged hens. The photons in the former were far more coherent than those in the latter. Biophoton emission detection is currently used commercially in the food industry. Now the scientific research about biophotons in our cells has huge implications for how we understand energy in the body and for influencing the future of medicine. In fact, Professor Popp's experiments showed light emissions were sufficient to orchestrate the body's repairs. Sound familiar? Does that sound like the body field's control system? Hopefully. He explored re-socializing photon emissions of tumor cells back to normal, and he also explored the idea that if we take in the photons of other living things, we might also be able to use the information from them to correct our own light. Now all of this kind of knowledge, it leads us to better understand the need to correct information and reintroduce better communication in the body, through energy medicine modalities and other ways, such as what we consume into our bodies. And if that wasn't enough, coming up as well: According to Dr. Popp, the meridian system transmits specific energy waves to specific zones of the body. So stay tuned for that, and he'll also discuss the



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transfer of information between people, such as between a practitioner and a client, and how there's more chance of a healing modality being successful when there is harmony, or coherence, and a positive intention between the two people. So to kick off the interview, I asked the professor about his background, and I "Popped" the big question, "What got you interested in biophysics, as opposed to just physics?"

Professor Popp:

I was originally an experimental physicist, then I later turned to theoretical physics, and then I made my habilitation in biophysics. I worked in a radiology center, where cancer patients were treated. From this time on I tried to understand cancer, as this was the reason why I came to biophysics. In order to find out what cancer is, I found that there are carcinogenic compounds. Their activity could only be explained in terms of their optical properties. So, for instance, benzo(e)pyrene is a very harmful substance, but benzo(a)pyrene is one of the most powerful carcinogenic compounds. Both these molecules have the same chemical properties. You cannot distinguish them because they are, more or less, the same molecules only with a shift of a benzene ring in the molecule. So, nobody could explain that the one is so active and the other is so harmless. I found out that the optical properties are completely different, and only the optical properties are the ones in which they are different at all. So, the idea was that the optical properties are decisive for cancer development. You know, there is a photo repair function in the body. Where, by photons, you can repair the damages. If you have not this possibility to repair, cancer may develop. For instance, xeroderma pigmentosum is a disease where this repair function doesn't work. Its photons, which are responsible for the repairs, they are in the UV range, or in the blue UV range. Just in this range, there is a difference between benzo(a)pyrene and benzo(e)pyrene.

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Harry:

So to clarify and elaborate a little, Dr. Popp discovered the benzopyrene, the cancer producing molecule, absorbed the UV light, then it re-emitted it at a completely different frequency. It was a light scrambler. The benzopyrene which is harmless to humans allowed to UV light to pass through it unaltered. Now puzzled by this difference, he experimented with UV light on other compounds, testing some 37 different chemicals, some cancer-causing, some not. After a while, he was able to predict which substances could cause cancer. In every instance, the compounds that were carcinogenic took the UV light, absorbed it, and changed or scrambled the frequency. It was another old property of these compounds. Each of the carcinogens reacted only to light at a specific frequency, 380 nanometers. Take a note and they will be used in one of ... Oh, I didn't ever mention it, but we are inventing a [hear-able] type device that will be shining light up through the ear at certain frequencies, with certain sets of information on it. I'm going to leave it there, because I don't want to ruin the big announcement that might come later. He kept wondering why a cancer-causing substance would be a light scrambler. He began reading scientific literature specifically about human biological reactions and came across information

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about a phenomenon called photorepair. So my next question was, "How did you come to discover that biophotons help in the repair mechanism of a cell?"

Professor Popp:

Yes, of course, there was at that time ... I was invited by the Cancer Research Center in Heidelberg, and I talked about my theory. They said, "In order that your theory is correct, there should be light in the cells, because if the molecules are not activated, you will not have a difference. So, the optical transitions in these regions should be permanently excited." And I said, "Why not?" So, we said, "Okay, then we will find out whether there is light in cells or not." I asked for support, for financial support. They gave me the support and we started in Marburg. I was, at that time, an Assistant Professor of Biophysics. They supported my work, and we started to look for these photons. I knew from the beginning on that it must not be very high intensity, but it was clear that one should have these photons at all in a cell. So, we started to work on this field. I had a very gifted student who made his Ph.D. by this work, and I asked him to construct an equipment where one could measure photons in this range. I knew that it has to be very sensitive, this equipment, otherwise one could not find it. He told me, "There is no photons in this range in cells." Nobody believed at that time. So, I said, "Okay, then show evidence that there is no photons in the cells." And he started to show evidence that there are no photons. I said, "Okay, if you show evidence that there is no photons, you can get your Ph.D. too. Why not?" So, we started and about two years later, we had an equipment where we saw that all living systems ... We started with cucumber seedlings, and later with other ones ... and all living systems which we put into the instrument showed this very weak photon emission. But not only the 380 nanometer range where we expected it. Over the whole visible range, we could see this photon emission. At the beginning, nobody believed in it, and we started to consider what could their ... what is their role, what is their function? Then we found was that before us, other groups and other scientists had shown already evidence of this biophoton emission. Photon emission, I had to say. They were thinking that they come from chemical reactions. This was the first thing which we found out, or which we believed in. We could not believe that chemical reactions are so important. Look, for instance, that it was not important for the role of these two carcinogenic compounds. The chemical properties were the same, so we expected just the opposite. We expected the photons are triggering the chemical reactions, but they are not originating mainly from chemical reactions. You have in one cell, you have, per second, about 100,000 chemical reactions. That's well known, so it's just the average. In order to regulate these functions, that at any instant, at the right position, and at the right time, the right chemical reaction takes place. You have to have the most perfect informational system, which gives you the informations, that a definite reaction has to take place, at the right time, and the only possibility for that are photons. Because in order to trigger a chemical reaction, you have to activate at least one of the molecules which takes part in the reaction. So, to activate a molecule in the right range, the right spectrum range, you have to have photons. So, it was clear from the beginning on that this can happen only by photons, which have to be in the cell.



Of course, I recognized it later, not at the beginning already, but with the time I became aware that only photons could regulate these chemical reactions, the whole metabolism. And it could not be a chaotic regulation, it had to be strongly ordered.

Harry: And so it is the purpose of the biophoton to contain and coordinate everything in the cell.

Professor Popp: So, this can be mediated only by photons. So, the photons should be the carrier of the information, which is necessary to regulate the metabolism. This was completely clear after some time of thinking about the situation. Then it was clear that you have two possibilities. The one is that the photons originate from chemical reactions, which is possible, of course. Or they are triggering the chemical reactions, this is possible at the same time too. At least, the high information content, which is necessary, can come only from the photons. Molecules are very stupid, they cannot regulate themselves. They have to have a fear, more or less, an electromagnetic fear, which is necessary to activate the molecules.

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Harry: So this begs the question, "What actually creates the photon emission in the cell?" And as the professor will explain, there needs to be an order, a coherence, and timing is everything.

Professor Popp: The photons have to be very coherent. They cannot be ordinary photons. The coherence time of an artificial photon is in the order of, say, a nanosecond. The coherence time of the photons of a laser is about a tenth of a second. You have to consider coherence times which are even much longer, or the degree of coherence should be much higher. In Berkeley, in California, they showed evidence that the quantum coherence in photosynthesis is much higher than expected. So, the efficiency of photosynthesis is much higher than they expected. There is almost no entropy production, we said, because this coherence is rather high. It has a ... it plays a big role, a very important role, for instance, for the warming of the earth. Not only there, but in all biological systems. You have this perfect efficiency of the different reactions, which is only possible with, more or less, a perfect quantum coherence of all the things which happen. So, these photons in a biological system have a very, very high degree of coherence, and we showed evidence in the last years of that. You can show it by means of possibility ... of statistics, of photon count statistics. Photon count statistics can give a proof of the high degree of coherence, and we showed evidence already. We took about ten years in order to show, to measure the degree of coherence of biophotons. So we are convinced now that the biophotons are the regulator of all the functions in the cells. It must not be only in the optical range, but you can take these photons in other ranges too, in the infrared range, in the microwave range, and so on. But you have always the same principles. A very high degree of coherence ... I do not say that must be coherence, but it can be coherence, can be very, very, very coherent.



Harry: [00:22:30] So next I asked the professor to describe one of his experiments where he sent infrared photons into the meridian systems and observed the photons along the meridian. And with his amazing microscopic view, what is the meridian really like?

Professor Popp: One can show for instance, by moxibustion. A friend of mine did it. I was not the inventor of this very surprising result. If you make a moxibustion, immediately you see that there appear channels on the body, and these channels are identical to the meridians of the Chinese medicine, usually. But one has to say, you can also produce channels which are different from the meridians. The whole skin is able to build these channels, and these channels are dependent on the circumstances. The meridians are different from the skin, because in the infrared photography, they are much hotter than the surroundings. They are really hot, they can get a temperature ... it's not a real temperature, it's an excitation temperature, and this temperature can be about 40 degrees, or even 50 degrees.

Harry: [00:23:50] So next I asked, "What difference does it make when the body is active? When the body is moving or having an increase in metabolism? When the body is moving or having an increase in metabolism, does the body produce much more biophotons, because more information is needed at that time?"

Professor Popp: It's not a question of the intensity. It's really a question of the coherence and of the distribution of the photons. You can get even phases where mainly destructive interferences, well it ... You transfer not only information, you transfer also the energy, and distribute it over the whole system.

Harry: So when a practitioner is trying to heal somebody, whether that's through homeopathy or acupuncture, or healing devices for instance, is that also transferring information in some form to that person, and can that information help nudge the body to get better?

Professor Popp: Yes. We have to know that coherence is not only important for the visibility and for the different functions of information transfer, it is also important for the distance over which you can transfer information. At rather high degrees of coherence, which are technically not possible, but in our biological systems they are possible, you have even to consider that the information can get out of the body over longer distance, and can be transferred and can be controlled and regulated over many, many kilometers of distance. But it is very difficult because with increasing coherence in this range, the matter becomes transparent. So, over long distances, you have the possibility to transfer information in terms of resonance principles. If you have a complicated antenna here and a complicated antenna here, which can transfer information by resonance, you can do it over many, many kilometers of distance.



Harry: There is a lot of talk about the perceiver effect and intention. Could there be a connection between different information systems, whereby the information is more important than the connection?
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Professor Popp: It must not be a permanent, straightforward information. It more some overlapping of the systems. It is even difficult to say who is now the sender and who is emitter. It becomes more and more a non-locality. This information cannot be taken by conscious, more or less, but it is more subconsciousness. It is not like in a telephone. It is some kind of agreement of, or finding the feeling to be in one state or such things. All these different kinds of information become possible simply by coherence, by a high degree of coherence. So, the information gets completely different ways as we are commonly used of.

Harry: So, I asked the professor whether this is like saying that the information exists anyway, but two people can access it at the same time. Like information that is recorded in the reality, but the patient and the therapist are just accessing it simultaneously.

Professor Popp: Yeah. Yeah, yeah. Yeah. It is an uncommon feeling. For instance, we speak of zeitgeist sometimes. Though many people think the same things, and it is a tuning into the surroundings and the environment. And the information character, it must not be personal. It may have many different roles. One who sets it, and who is in my opinion, at least in principle correct, is Sheldrake for instance. He thinks of such kind of information. One knows that the most important point is this kind of information. It depends not on the intensity, it depends on resonance conditions, which can happen at very, very low intensities. For instance, the information in a cell, which is necessary in order to regulate the whole metabolism. It is not necessary to have a lot of photons. You can do it with one photon. You can with one photon, you can regulate about ten to the nine reactions per second. Why? Because a reaction, a chemical reaction takes place in about ten to the minus nine seconds. The photon triggers a reaction, the compounds become reactive by taking up this photon, but after a nanosecond, the reaction is over, and the photon plays a catalytic role, gets back to the field, which is not thermalized. So, it is available again for the reaction, again. It is a non-local coherent field. And after a nanosecond, the next photon is available, so you have two photons in ten to minus nine seconds, which means that you can trigger about ten to nine reactions per second, with one photon. So, you need not very high intensities. You can do it in a non-local field with one photon. The same happens not only in one cell, because of the transparency, it works in the whole body. And over the body, it can also work outside of the body, in distance, in distant parts of the body. Of course, there is a big chance that it goes down with the distance, it goes down after definite law we do not know ... it must not be a square law, but take even it that is an S square law. Nevertheless, it is a big distance at which you can get information by resonance principles. I calculated that if you have a high tuning of resonance, you have always the possibility of an information transfer. Of course, it may not



be ordinary, but we are more or less used to it. We take some information of it without knowing that we take information of it. It is very difficult to show experimental evidence of that. But for instance, in the Second World War, many mothers, they said they immediately knew that their son was shot down or killed in Russia. Why could this happen? Many, many mothers said it, and it was evidence that they really knew it. Because DNA is a very complex molecule, and mother and son have probably some resonance possibilities. So, over the distance from Russia to Germany, there could be some kind of information just switched on when the son died in Russia. This could have happened.

Harry: Pretty incredible. So, if you're a therapist, perhaps you're tapping into such a resonance, even from a distance. So, do electrons and photons also have the non-locality property?

Professor Popp: Of course, you can construct non-local situations. But you need in this field always ... this is an important point, you need a very high degree of coherence. Otherwise, it would not work.

Harry: Next I asked Professor Popp a little about his research involving personally working with healers. So, if you're a practitioner, how important is the connection and exchange of information between you and your client? And what about your intention to heal, what role does that play? And do the studies suggest all this could be happening with the healer and client relationship too?

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Professor Popp: Yeah, I the impression that it works probably in the same way. I myself was subject, now, of several trials. I can now measure with our equipment whether you have an improvement of the regulatory capacity of the body or not, after such a process. There is an overwhelming number of cases I saw, that a healer influences and supports the regulatory activity of the body. We have different healers. One makes it with this method, the other with another method, but I have the impression that the healer have to concentrate and to wish to influence the body in a positive sense. For instance, I have two healers and the one ... I do not like this healer. I do not know why, but she has never success with me. The only one who is not successful. But she is successful in other cases, so probably the intention plays a strong role in this. In the connection or exchange of information.

Harry: So, I hope you really enjoyed listening to the episode about Professor Popp. It's a pretty, pretty fascinating subject, the whole biophoton end. There is an awful lot of other cutting edge research going on, and ... Well, actually earlier I sort of mentioned about this hear-able type device. We will be integrating a lot of the biophoton light research within our next set of hear-able devices, which are pretty, pretty exciting. Which will basically be available for anyone in the Energy4Life stratosphere. That is coming next. All right. Well, thank you and talk to you in the next episode.



Wendy:

Please keep in mind that this podcast is not intended to diagnose or treat any disease or health condition, and is not a substitute for professional medical advice. Please seek a medical practitioner before engaging in anything that we suggest today on the show.

