AN INTERVIEW WITH ANADI A. MARTEL, THE SENSORA'S CREATOR

AVSJ: ***Please give a little background about yourself and your company.***

AM: I've been into electronics since the age of 12, so it's a natural thing for me. I entered University at 16 and did graduate studies in Theoretical Physics. I then went to India for a few years, learning meditation and an appreciation of the inner qualities of the mind. When I came back to Canada I felt I didn't want to get into an academic career, so I started my own company in electronics design, Sensortech Inc.

AVSJ: ***How did you initially get involved with Sensora technology? What equipment did you first use? When was that?***

AM: In the late seventies we were experimenting in psychotherapy groups with ways to induce inner experiences through a deeper perception of sound. At that time I started to design a variety of electronic devices, which culminated in an audio processor that enabled the creation of moving sound environments surrounding the listener. Omnisound, a company that I started with a partner in California, commercialized that device around 1985 as the SSP-1 Spatial Sound Processor. It was quite original for the time, and was adopted by researchers (including some at NASA) and multimedia artists; I always find it amusing that this device won a prize as the *"most innovative sound instrument of the year"* at a trade show in 1991… six years after its creation! I designed two further generations of these Spatial Sound Processors with Omnisound (which has since folded), and they are often being used in cinema studios now that spatialized sound has become a mainstream technology, with Surround Sound in most theatres and Dolby Digital on DVDs.

Anyway, in the eighties after working on sound I became interested in using other senses as gateways to inner exploration. I started to experiment with light, colors and stroboscopic pulsations; I acquired one of the early EEG brainwave monitors made by pioneers Geoffrey Blundell and Maxwell Cade; with a group of fellow artists and researchers I put together various multimedia installations involving video, multi-slide projections, ultrasound and infrared detection, odor diffusers, MIDI control… These early experiments were pretty wild!

Over the years of designing and testing various sound / light techniques, my psychotherapist associate M. Premo and I worked with hundreds of people and gradually found out which approaches were most effective for our purposes. By the mid-nineties we had identified and integrated various elements into a coherent multi-sensorial system constituting the first generation of what we called the ***Sensora***.

One of the main breakthrough happened when we started to integrate brainwave entrainment into light projections. In order to achieve this I eventually developed (and patented) a process that I call *"Light Modulation"* involving many Low Frequency Oscillators modulating each other to control light intensity and color; essentially it involves applying the principles used in sound synthesis (one of my early electronics interests) to control light. As with sound synthesis, the tricky part lies in finding ways to organize and synchronize a large number of modulation parameters (more than 100 in the case of the

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Sensora) into a coherent whole; this required years of research and fine-tuning. I also had to design special light projectors that could accommodate the high reaction speed required to modulate light at up to Beta rhythms of 20Hz.

All these elements finally came together into a complete, commercial system in the year 2000.

AVSJ: ***What do you consider to be the essential elements of the Sensora? Were they developed separately and later incorporated or were they developed 'as one'? Which element do you deem most important? Why?***

AM: An essential feature of the ***Sensora*** is its multi-sensorial nature: we found that the deepest experiences brought about by sound / light stimulation occur when many senses merge into a harmonious whole, a phenomenon known as synesthesia. That is why the ***Sensora*** integrates sound (hearing), light (vision) and kinesthetic vibrations (touch).

(We also experimented with odors and tastes, but while these senses are undoubtedly very conducive to synesthetic experiences they are unfortunately more difficult to handle with current technology! Diffusing beautiful smells is easy enough, but getting rid of them once they are released is not so simple…)

So the ***Sensora*** in its current form uses three separate inventions: the Spatial Sound Processor to create an encompassing sound-field, the "Sensor Driver" which performs light modulation, and a Transducer Chair that generates waves of kinesthetic sound vibration. While each was invented in succession, I have spent the last ten years refining them so that they integrate seamlessly into the ***Sensora*** multi-sensorial system.

If one element is to be singled out, it has to be the light projection – simply because of all senses vision occupies by far the most resources of our brain, and has the greatest impact on our perception. The ***Sensora*** uses a hemispherical projection screen large enough to cover your whole field of vision and light projectors using high-quality dichroic filters, so that you feel immersed into a field of exquisitely pure colors – a very powerful and moving experience. Since the "Sensor Driver" allows the generation of brainwave pulsations right into the light projections, the ***Sensora*** simultaneously works with both color therapy and photic brainwave entrainment.

AVSJ: ***What distinguishes the Sensora from other Audio-Visual Stimulation devices?***

AM: I think the ***Sensora*** must be the most *impractical* AVS device ever designed! It is complex, expensive and occupies a whole room… The ***Sensora*** is what happens when you let passionate researchers loose for years, with their emphasis on the most uncompromising quality of the AVS experience rather than on the technology's cost. Seriously… the distinguishing quality of the ***Sensora*** is that it not a *device* but an *environment.* It uses a set of instruments that transform a dedicated room into a multi-sensorial projection space, an open environment into which you can walk, sit and relax.

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This approach is obviously much more costly than working with small devices such as light goggles and headphones; we have chosen it not only because it allows the generation of high-quality AVS experiences, but also because we have always felt that it is more readily acceptable by the general public, less threatening and more comfortable.

So the ***Sensora*** is by its very nature a rather exclusive, high-end system that will appeal to those who are looking for the very best that current technology can offer, regardless of cost (about $25,000US for a complete single-chair system).

I should add that in terms of functionality, the ***Sensora*** has some features found to my knowledge in no other system. Among these: the ability to project a light field with five independent zones (two left, one central, two right) each with its own color and brainwave frequency / depth. This opens unique possibilities both in terms of the laterality of brainwave entrainment, and in expanding color therapy along the lines of Dr. Jacob Liberman's SRS (*Spectral Receptivity System*). Also unique is the ability of the Transducer Chair to distribute kinesthetic vibrations across eight independent zones (2 rows of 4 across the chair surface), allowing transversal as well as longitudinal wave patterns.

AVSJ: The Sensora is a fascinating technology. How often do you personally experience a Sensora session? Where can people go to experience it?

AM: While I'm creating the ***Sensora*** programs, I'm continuously immersed in it for days on end! Otherwise under normal circumstances I enjoy one to a few sessions per week.

Still now after years of using it I marvel at the extraordinary splendor of pure colors, always fresh and invigorating… Many times during the long development period we went through self-questioning phases, where we doubted the wisdom of investing so much time, energy and money into a project so far off mainstream society's norms. Each time this happened, when we sat down in the ***Sensora*** after a few days or weeks break we were again so startled by the beauty of colors and sound that we knew we had to continue!

We are just now starting to commercialize the ***Sensora***, so it is a brand-new product; at this moment the only place where it can be experienced is at our demo room, located at our Ste-Adele headquarters in Quebec, Canada. This may soon change as the first systems get installed in Asia and the U.S.

AVSJ: Could you please explain, in simple terms so us neophytes can understand, what the Sensora actually does and how an individual can learn how to operate it?

AM: The ***Sensora*** consists of a large hemispherical projection screen, a special light projector, a special transducer chair, a surround-sound system, and a special computer driving the whole installation.
The ***Sensora*** surrounds you into a field of pure colors, moving sound and kinesthetic vibrations. Within the color projections are embedded brainwave entrainment pulsations

that gently help your brain towards specific mental states. These sensorial components are programmed into sessions lasting 20 to 25 minutes, each one bringing you through a complete inner process. Currently we have created three families of sessions: "Relaxation", "Energy" and "Meditation."

The ***Sensora*** is extremely simple to use: you just select a session, sit in the chair and press the "Play" button! From then on everything happens automatically, all the complexity of the system being hidden in the session's programming. You simply relax and let yourself be taken on an inner voyage of light and sound.

AVSJ: What are some of the benefits of using Sensora?

AM: On the whole the benefits are the same as those of all AVS systems: relaxation, stress reduction, increased alertness… The ***Sensora*** has an additional key advantage because it creates a truly *aesthetic* experience, through its captivating environment of beautiful shimmering colors and softly moving sounds.

This opens up a whole extra dimension in terms of psychotherapeutic applications of AVS, because you don't only work with a raw technological process (as you would with LEDs flashing in your eyes, for example) but you can actually touch people's heart and sensitivity through the sheer beauty of the environment. So you can use the ***Sensora*** process to assist in work on psychophysical and emotional levels.

We see the ***Sensora*** being used in two main modes. Firstly as an ***"inner entertainment"*** system in places where people go to relax and be nourished, such as spas, resorts and health centers; also in corporate settings, for example to help managers in restoring creative energies for brainstorming meetings; finally in upscale homes - we have plans to create the ultimate multi-sensorial bedroom!

Secondly, the ***Sensora*** can be used as a powerful adjunct to different types of therapeutic processes. In this mode a therapist uses it as an amplifier to enhance his/her specific process. In the safe and stimulating environment of the ***Sensora***, whether before, during or after therapy sessions, the client can reach deeper levels in less time. We have already seen interest from various health professionals, including doctors who see potential applications in the treatment of addictions or rehabilitation of cerebral poly-traumatisms. We are planning to encourage studies in that direction.

I would also like to mention that we have found the ***Sensora*** to be an excellent tool to bring you into the present moment, and we have been exploring this aspect in the "Meditation" series of sessions. In each of these sessions, a voice gently guides you through a different meditation technique.

AVSJ: How would athletes incorporate the Sensora into their peak performance training regiment?

AM: Peak performance training is an ideal application of the ***Sensora***, which can directly enhance programs of relaxation, mind training and creative visualization used by athletes. We are not ourselves specialists in peak performance training (it is a whole field in itself), but we are looking forward to design ***Sensora*** sessions specifically adapted to the requirements of professional trainers.

AVSJ: Can the Sensora experience be made available in group situations?

AM: Oh yes, we have actually used the sound and light components of the ***Sensora*** during public concerts, illuminating the entire stage with brainwave-entraining color projections – quite wonderful…

In terms of ***Sensora*** installations, we can create rooms with a single chair (for individual sessions), with 2 chairs (nice for couples), or more. It is also possible to make larger rooms with a continuously-running AVS environment into which people can walk in and out at their leisure; we are currently planning such an environment in a dome-shaped room with a high-end spa developer.

AVSJ: What do you project for the future of this new and interesting experience?

AM: Currently I am developing a new user interface based on a touch-screen attached to the ***Sensora*** chair. Its first function will be to allow the user to preview and select sessions right from the chair.

I will then add a whole programming interface that will allow advanced users or therapist to create their own ***Sensora*** sessions. This is not a simple matter: up to now, the ***Sensora*** sessions have only been programmed in our lab because of the complexity of all the multi-sensorial parameters involved. The new touch-screen interface will encapsulate much of that complexity in pre-programmed "scenes" that can easily be tuned and assembled in sequences by the user. I am hoping that this will make ***Sensora*** more accessible to other developers and open up new collaborative possibilities.

AVSJ: How can people contact you for further information?

AM: I can be contacted through the web site www.***Sensora***.com, by email at president@***Sensora***.com, or by phone at 450-229-3992.

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