Video Analysis of Structure

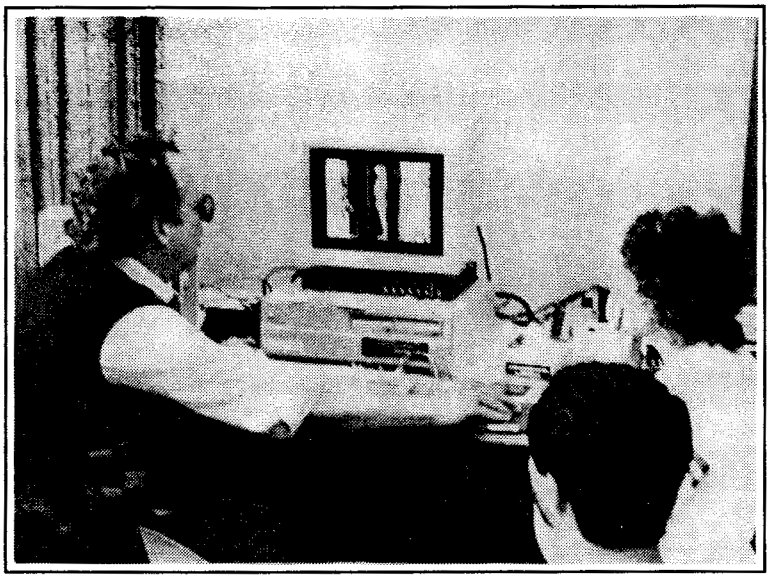
by Robert Schleip

I want to share with you my excitement, hopes and fantasies about a new technological breakthrough that is happening at the Rolf Institute. Some members have already seen it at this year's Annual Conference, and it has literally been the "talk of the town" around Boulder in the last few weeks.

John Davis, a Boulder Rolfer trained by **Nicholas French** and **Peter Melchior**, has been working for the last three years to develop computer technology that far surpasses Polaroid photos in assessing structural changes in Rolfees. About a year ago, John Davis and Justin McCormick invented the Optimum Comparison Tech Video Digitizer, a device to translate information from an ordinary video tape into digital information which can be processed by a computer. The amazing thing is this system has been developed to the stage that it is almost impossible to distinguish between the best original video tape image and the re- created picture on the computer screen—including colors and contours. Additionally, it has 256 grey scales x 4 and can display all these grey scales through custom hard ware.

The rest is comparatively simple. Taking static "Before-and-After" pictures with a video camera (instead of a Polaroid), John is able to manipulate them in a variety of ways: enlargement, superimpositions, multicolored printouts, measurement and data storage, just to mention a few. Most impressive of all, the changes from one session to another can be shown as movement by bringing the "Before-and-After" pictures to exactly the same size and place with the touch of a single button!

As the images are manipulated, you see the body actively changing (both backwards and forwards in time): session by session you see the head coming up, resting on shoulders...ribs popping forward...the jaw changing its angle...the heels growing longer. Focus can also be directed to any specific part of the body and enlarged for closer study of details.



John Davis demonstrating OptiComp System during 1988 Annual International Conference. Photo: Philip Lange

As I watched the image of a body changing in a matter of seconds, I was reminded of the speeded-up films of plants growing: the body becoming tall, ribs widening.....

With this equipment, you can easily show a client the differences between his/her "Before-and-After" structural configuration, and they'll be able to see it! If there is a visible difference, the push of a single button will reveal it.

Another interesting feature of this "Optimum Comparison Technology System" is contour maps of the body. This equipment can measure the darkness/lightness of any point and translate it into a grey scale that is even more differentiated than the most sensitive human eye. Much like a topographical map, these contour maps show all areas with a similar light reflection in a certain color. The enclosed packet of four slides of contour maps shows typical changes "Before-and-After" associated with Session 3. You can see that work around the lateral line resulted in a different arrangement of tissue on the outside of the thigh.

Recently, John Davis did a pilot study with his system during the Basic Training Class taught by **Nicholas French** this summer in Boulder. He took video "Before and After" of all sessions happening in the class and also video taped everybody walking on a treadmill; so an exact, slow motion study can be done of leg and foot movement. After his class had concluded, Nicholas told faculty members he believes use of this system in the classroom improved the seeing-skills of practitioners and auditors, although he had been very skeptical in the beginning. He felt the accuracy of visual analysis by students was more highly developed than usual, and he attributed this to use of John's system.

As Assistant to Nicholas, I totally agree with his observations. I would also point out that besides the educational value of the OptiComp System, it also contributed tremendously to enthusiasm about Rolfing, particularly by practitioners and their models. I saw several people in tears when they saw

how incredibly beautiful the change of their progress was in just one session. And at the tenth session, John showed the models the entire sequence of change during the 1-10 process as one continuous movement: a beautiful, sometimes wavelike motion of a person lengthening, expanding, and finding his/her Line. The models received color printouts of their visible Rolfing changes, as well as video tapes—very nice presents to mark the tenth session!

During those seven exciting weeks, I watched several computer specialists from all over the country coming in the backroom "Annex" of our Rolf Institute to see John's system, because they had heard about it from other computer technicians who consider it to be a major breakthrough. And they all seemed very impressed by what they saw. I also observed several Rolfers coming in to see the system and being very moved and then spontaneous giving John a donation—which he immediately invested in upgrading his system with e.g. a larger screen.

Presently Davis' OptiComp System operates with an "Amiga 2000" or a MacIntosh 2" computer; however, it will soon be available for other computer systems. Although John has been offered large amounts of money (up to $100,000) to sell the rights of his system, he has chosen to use it mainly for us Rolf Institute members. He is selling this system for use by individual Institute members or in the Institute's training program for $20,000; and depending on the equipment a buyer may already own, the price could be reduced by $3,000-$4,000.

During the August 22-24 Board Meeting, John demonstrated the system and **Emmett Hutchins** attended to specifically emphasize the value and importance of this equipment for the Institute. He considers it a "significant upgrade in the quality of the training," and recommended it be purchased for use in Institute classes. Emmett has also invite John Davis to use his system again in the next Basic Rolfing Class which Emmett teaches in Boulder this Fall, and John has accepted.

Soon we will have a substantial data base of Rolfing video data that we can use for specific research and study. Using this system, it is very easy to construct, measure, and compare certain geometrical lines and points in the body's structure. Personally, I am eager to use it to test a variety of hypotheses and questions, e.g.

- The correlations between lateral/medial calcanei and genu valgus/varus patterns, pelvic tilt, spinal curves, etc.
- Is our classical Rolfing "recipe" as effective in persons with a posterior pelvis?
- Can the computer recognize a typical change of a specific Rolfing session (e.g. session #2), compared with the changes of other sessions?

Currently John is preparing the use of low level x-ray measurements from different angles to construct a three-dimensional map of the body's bony structure, and this map can be used and processed just like surface data. It will be very useful to us to have the computer correlate the surface contours of the body, the "contour maps" of tissue arrangements, and some movement data with the body structures inside. I think soon this research will assist us to see the bony rotations inside the body just by looking at the tissue, the movement and contours outside.

What an adventure to see the torsion of the ilii more precisely or the rotation of a femur or tibia. . . .

Just this morning, John told me enthusiastically about another breakthrough in his system. Instead of just taking one picture, his system can now take 15 to 60 shots per second of any full body movement, digitize it on the computer, then we can do all the various comparisons and measurements as it is shown on the screen. He has already received an invitation from the Olympic Council of the national men's and women's skating team. When John invited me to look at this new movement analysis feature, he said, "Our Movement Teachers will be ecstatic when they see this."

So you see I am very excited and optimistic about this. I still feel the quality of our work is mainly dependent on non-technical factors, such as intuition, quality of touch, contact with the client, and intention. These are and still will be the main event and value of our sessions, but I expect this new technology to change dramatically the setting, the outside package, of this beautiful human experience.

Already the media are calling John Davis and the Rolf Institute to find out about the OptiComp System, and I fully predict much more attention from television networks, national magazines, and newspapers who want to report about this new technology in connection with Rolfing. Get Ready!!!!

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