

Special Feature

An Intellectual Itch That Needed Scratching

The working lives of many take a few twists and turns over their careers and mine is no exception. The most significant change for me was arriving in the U.K. from a quiet life in sunny Australia on a scholarship to help with the development of a new way to measure the impact of scoliosis or a curvature of the spine among affected children. Twenty seven years later and I am still here, having spent most of my time working on better ways to measure human and animal motion with wide applications in medicine, rehabilitation, sports performance, engineering and in the making of many *blockbuster* movies.

Must be a Seven Year Itch

I have always felt that there were still outstanding questions about the work on the spine and thought maybe what I had learnt over the years might be useful in answering some of them. Seven years ago, my long suffering wife, Cindy, was woken in the dark with me bolt upright babbling, "I am going to do a doctorate on the human spine." I think her reaction was, "very nice dear, do please tell me again in the morning."

The most common form of scoliosis occurs during adolescence with the spine curving towards the arms and rotating over time with no known cause. Usually the first indications are changes in body shape that in some children results in the presence of a hump under a shoulder blade or hems no longer lining up. Following diagnosis most children do not exhibit any significant worsening of their condition and are routinely monitored several times a year until they reach skeletal maturity. For some, the motivation in seeking treatment is to

improve their appearance rather than to correct and stabilise any underlying spinal curvature. Cosmetic concerns and an understanding of the psychosocial and physical impacts of scoliosis and the expected outcomes of treatments are important factors in the clinical decision-making process.

Helping Children with Scoliosis

I wanted to develop a new method using only inherently harmless video cameras and light with a bit of mathematics, to more reliably measure and quantify both the body shape and the physical abilities of children with scoliosis to provide additional and hopefully useful information to clinicians. Fortunately, Oxford Brookes University agreed that my ideas were worthwhile and enrolled me as a part time student to be supervised and mentored by a brilliant professor of vision science. After six happy, demanding and hugely challenging years, where poor Cindy saw much of the back of my head, I finally submitted my thesis and in April this year dressed up in flowing, colourful robes to receive my piece of paper.

I did indeed answer most of the questions I had posed at the outset of the study but ended up with many more to try and solve. Again fortunately, Staffordshire University asked me to become a visiting fellow to continue the research with an orthopaedic surgeon and clinical scientist who are both spine experts. I hope that our work may eventually make a contribution towards improving the quality of life of children with scoliosis throughout the world in the years to come.

Tom Shannon