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## **The Science of Wisdom**

by Martha Herbert

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In the brain-imaging research center where I work, a growing number of scientists study acupuncture and meditation as well as other modes of complementary and alternative medicine. Powerful MRI machines allow us to visualize the inside of the brain and see the provocative constellation of brain regions activated by a well-placed acupuncture needle. Such studies validate acupuncture – they show its specific and distinctive effects. More studies are beginning to explain its effects in terms of Western physiology. And some scientists even imagine that they might yet improve the acupuncturist's art.

But scientists open-minded enough to study acupuncture are also humble enough to realize that their skills and tools would not allow them to invent an integrative framework like acupuncture from scratch. Science these days is fast-paced. It isolates variables and focuses on small systems extracted from their full living contexts, and it considers subjectivity a contamination. Acupuncture, on the other hand, grew over generations of cumulative sensuous observation. It was validated not by high-tech machines, but by intimate sustained attention to the patterns among multiple subtle shifts in a patient's pulse, tongue, temperature, color, mood, organ function and vitality. So today, acupuncture is helpful for many chronic complaints for which Western medicine has no remedy.

Traditional agricultural practices are like acupuncture in that, in common with other "indigenous knowledge systems," they grew over generations of sensitive observation. These practices gain their sophistication from intelligent recombinations thus, different species thoughtfully planted together may keep away pests, increase yields, encourage helpful wildlife, prevent erosion. They offer no magic bullet, but multiple interacting insights gained over generations of cumulative sympathetic engagement with plants and animals, soils and streams, woods and weather.

There are scientists who hold the robustness of ecological complexity as their model for human interventions in nature. Some of these are agroecologists who use new technologies to augment rather than replace a sympathetic context-sensitive engagement with nature and in effect, to augment human intelligence as well.

Genetic engineering, by contrast, is clever, but not so clearly intelligent. Recombining a gene from one species into another takes no wisdom. It can be done with the right skills and equipment but nothing built into the technology forces you to first check whether these recombinations are good for the organism or the ecosystem. And many of genetic engineering's "improvements" could be done better and more safely and simply using traditional agricultural techniques like multicropping and composting. Much more cheaply, too. Investment in genetic engineering has been enormous for its small yield, and it is the pressure to recoup this investment, more than the value of GE's paltry array of products, that drives the rush to market of poorly tested, flawed, engineered foods a rush that is then justified by appeals to faith in techno-progress.

Too many genetically engineered products are little more than commercialized lab tricks. Clever maneuvers, when done only in a lab, may teach us interesting things about nature. Clever lab tricks, when spread through the environment, may have unforeseen consequences that cannot be predicted from a controlled laboratory setting. Genetic engineering can create change without understanding its context. Its technology – or capacity to tinker – is ahead of its science, its capacity to understand.

While corporate science postures that it offers the only alternative to primitivism and starvation, in truth it is not the only possible science. Human intelligence can relate to nature with more sensitivity to the rich complex interplays among molecules, cells, organisms, environments and cultures. Agroecology is a scientific approach to food that cultivates just such context sensitivity. It may not be the best way to create marketable products after all, you can't really patent or own multicropping or composting. But it is far better than commodity-oriented science at creating sustainable agriculture. Like acupuncture, it aims to

gently tweak a whole system to mobilize its own complex self-corrective processes.

Given the expense and risks of genetic engineering, it would seem reasonable (were corporate pressures not the driving force) to consider all possible alternatives. An honest approach to food and hunger would work with nature, and work with small-scale farmers around the world, honoring rather than decimating the wisdoms and life-worlds that already exist. This is just what agroecology does.

Let's be wise and truly consider all our options.