

## Putting Confidence Where It Can't Be Lost

Robert D. Jansen, PhD

To gain knowledge in any field is to become aware of more alternatives than previously supposed possible; and, within the context of so many more alternatives, any specific alternative we might consider appears less important than it did before. The net effect is that with more education we often experience the feeling of a loss in certainty rather than a gain.

Because this reduction in certainty is totally unexpected, many students in chiropractic colleges feel disillusioned and even betrayed as they progress through modern chiropractic education. Many arrive certain of everything and expect to become even more certain. Instead, they find themselves more and more confused, more and more uncertain just when they feel the need for certainty most, as they begin making clinical decisions.

Making yes/no decisions in the face of uncertain and complex circumstances can easily exceed our unaided abilities. When the weatherman says there is a 60 percent chance of rain today, do I cancel the picnic or not? I do not have the luxury of canceling 60 percent of the picnic: I must cancel all of it or none of it. Add to the equation: If it rains we lose all the food and cannot have the picnic later, but if we cancel the picnic, we can have it next week. But, if we cancel the picnic today, some important people will not be able to attend since they will not be in town next week, and besides, much of the food will spoil in the interim anyway. Now, do I cancel the picnic or go ahead?

In a similar fashion, a clinician might be asked to decide to treat or not to treat when there is a 58 percent ( $p = .58$ ) chance of a positive therapeutic outcome, but at the same time a 32 percent ( $p = .32$ ) chance of harming the patient. And the situation for the clinician is usually worse than this: there might well be several therapy options, each with several possible outcomes (e.g., improve quickly, improve slowly, no change, get worse). Each of the possible outcomes has a different likelihood of happening for each particular patient population: and each kind of outcome also has a distinctly different utility, based upon an analysis of risks, resources, costs, and benefits, relative to either the individual patient or to the health care system at large.

The decision options can be mind-boggling, even for relatively simple choices. For example, how do I decide between the therapy mentioned above, .58 chance of quick improvement, .32 chance of immediate patient harm, versus a more conservative therapy with less chance of immediate patient harm, say,  $p = .12$ , but also with less probable patient benefit, say only a  $p = .32$  of slow improvement. Compare both of these with a third therapy which has a .75 of fast improvement but carries a .10 risk of future surgery in ten years?

Recent research in "decision theory" has shown that clinicians of all kinds do not do very well with multi-variable complex decisions such as these using only their intuitions (what psychologists call "informal" decisional processes). In fact, a famous early study in this relatively new field demonstrated that any formal system of making such complex clinical decisions is likely to generate better decisions than are made informally by even the most experienced clinicians. Apparently human beings are simply not very good at making decisions involving many variables without the help of some kind of formal system.

Formal decision systems have been developed in business, economics, law, medicine, and are just beginning to be developed in chiropractic. They have many advantages, not the least of which is that consensus among clinicians (and other interested parties) is easier to accomplish because every decision is determined by the interaction of many elements, each of which has a changeable assigned value: definition of patient population, outcome probabilities, utility, cost, risk, benefits, and resource availability. All of these combine and interact to determine the overall value of any treatment, and, by inference, its usage. Once the general structure of a formal decisional system is agreed upon, each of these subvalues can be discussed individually. Developing agreement on any one of the variables is relatively painless because there are many and because the number, degree and direction of required concessions may be fairly shared by all parties involved. Formal decision systems are not particularly difficult to use. Decision "trees" or clinical treatment algorithms can integrate many variables, are extremely flexible, and take into account the changing state of the patient. But perhaps the most satisfying aspect of developing improved decision systems in chiropractic will be for the doctor who is feeling the loss of "certainty" caused by his increased knowledge. The naive feelings of complete certainty can never be gained, of course, nor would they be desirable.

By improving and maintaining the highest quality decision methods, a different, more resilient kind of confidence in chiropractic becomes possible, one which can never be lost. It is not a confidence in facts, which are inherently changeable, but rather, a confidence which grows from a commitment to use only those decisional methods which are as current, comprehensive, accurate, and effective as possible.

*Robert D. Jansen, Ph.D.*  
*Executive Director,*  
*Consortium for Chiropractic Research*  
*Sunnyvale, California*

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