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Wicked Problems

Professor Horst Rittel of the University of California Architecture Depart-
ment has suggested in a recent seminar that the term "wicked problem" refer
to that class of social system problems which are ill-formulated, where the in-
formation is confusing, where there are many clients and decision makers with
conflicting values, and where the ramifications in the whole system are thoroughly
confusing. The adjective "wicked" is supposed to describe the mischievous and
even evil quality of these problems, where proposed "solutions" often turn out
to be worse than the symptoms.

Just how extensive are the wicked problems, he did not tell us, but one was
led to conclude from the discussion that the membership in the class of non-
wicked problems is restricted to the arena of play: nursery school, academia and
the like.

Rittel suggested that there are various attempts to "tame" these wicked
problems, among which must be counted the efforts of operations research and
management science. Sometimes the taming consists of trying to generate an
aura of good feeling or consensus. Sometimes, as in OR, it consists of "carving off"
a piece of the problem and finding a rational and feasible solution to this piece.
In the latter case, it is up to someone else (presumably a manager) to handle
the untamed part.

A better way of describing the OR solution might be to say that it tames the
growl of the wicked problem: the wicked problem no longer shows its teeth be-
fore it bites.

Such a remark naturally hints at deception: the taming of the growl may de-

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ceive the innocent into believing that the wicked problem is completely tamed. Deception, in turn, suggests morality: the morality of deceiving people into thinking something is so when it is not. Deception becomes an especially strong moral issue when one deceives people into thinking that something is safe when it is highly dangerous.

The moral principle is this: whoever attempts to tame a part of a wicked problem, but not the whole, is morally wrong.

Such a moral principle would appear to be ridiculous to many a management scientist, who has been brought up to believe that he should only tackle "feasible" problems. For him to tame the whole of a wicked problem is not feasible, and hence the moral principle tells him to do something that his teachers told him was wrong. Of course, none of his teachers was ever able to tell him what "feasible" means, because *that's* a wicked problem; but nevertheless, the student of management science usually develops his own idea in a short span of experience.

For those who believe they can identify the feasible, there is the saving moral principle of honesty. If I tell you honestly what I have done, so goes the story, then you need not be deceived. So the management scientist, being honest, says to the manager: "Look, I've not tamed the whole problem, just the growl; the beast is still as wicked as ever."

This is how morality aids morality in the arena of right and wrong. But there is a sneaking suspicion that the answer is a weak one. It takes more than a verbal caveat to *inform* the manager that the OR solution is incomplete. The model, or the large computer program, plus expensive months of data collection and analysis, must give the impression that most of the wicked problem has been tamed. Dishonesty, as any con-man knows, can be created in the environment of complete, outspoken frankness and honesty.

What seems to emerge is not a moral reprimand of the management scientist, but rather a moral problem of the profession, a wicked moral problem. To what extent are we morally responsible to inform the manager in what respect our "solutions" have failed to tame his wicked problems? Does "inform" merely mean that we clear ourselves legally, or does it mean that we attempt to enter into a deep, mutual understanding of the untamed aspects of the problem?

To date, operations research and management science have been largely indifferent to the morality of the profession, perhaps because the profession has not yet taken itself seriously. That the profession has a moral problem, nonetheless, there can be no doubt. It might make us look more mature if we began to discuss it.

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Letters to the Editor

To the Editor:

The transfer of scientific knowledge in usable form to the industrial complex can be a starting point to emphasize the impact of communications as a source of national economic growth.