

Dividend

*The Magazine of the Graduate School of Business Administration * University of Michigan • Winter, 1974*

The "Real World"—

Where is it?

Can it be taught?

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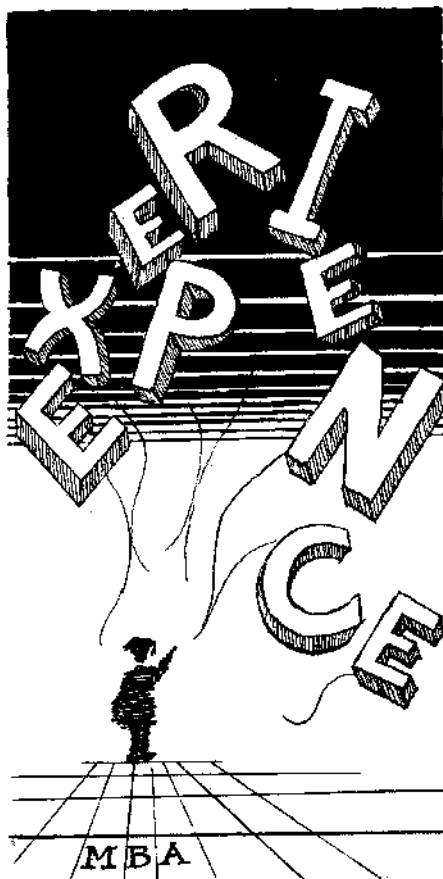
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By D. O. Bowman

WHETHER one is working toward an MBA, or as a sandhog on a new tunnel, or as a top executive, one cannot escape the "real world." We conceptualize that there is something that can be defined as a "real world" as distinct from one that is somehow (by implication) "unreal." But what one accepts as real or unreal is a matter of one's personal orientation, experience, and intellectual processes rather than a substantive, identifiable set of "worlds."

However one defines the "real world," is there any way to prepare students for it? This breaks down into several questions: 1) What can be taught in the classroom that prepares a student for the "real world?" 2) What can only be learned by experience? 3) What ought to be taught about the "real world?" and 4) What cannot be taught in the classroom? (Really an extension of 2.)

Let's consider the first question, "What can be taught in the classroom that prepares a student for the real world?" Can responses be learned in advance of the occurrence of an event so that some preconceived result occurs? Probably not. One can be taught the functions and skills that come into play in the world of business, or, for that matter, the functions and skills that typify other professional worlds. But at least one purpose of learning is to acquire skills, so that, as dissimilar situations occur, the skills are there to be used in a combination that is structured at that time to that situation.



What kinds of things can only be learned by experience? And what kind of experience is needed? It depends upon the type of business activity one is discussing, but in general there are two kinds of business situations which represent two ends of the spectrum of "real world" experience.

At one end of the spectrum is the business situation characterized by continuous or repetitive activity. No

decisions need to be made in this kind of situation except when there is some aberration in the usual pattern. When an aberration in the usual pattern occurs, decisions generally derive from previous and similar occasions and are repeated because on previous and similar occasions the pattern was restored by the decision. Thus a body of "executive experience" develops, and the "experienced executive" in this context is one who knows from past experience which decision arrow to draw from his quiver of past actions. This kind of experience isn't very intellectually demanding. It can be acquired by time, persistence, and perspiration. It is important, too, in getting the world's work accomplished, and it generally cannot be taught in MBA programs.

At the other end of the spectrum is the situation that requires an executive talent that is rare. This consists of the intellectual ability to react to a dissimilar situation so as to create a new and different pattern of activity. Although this ability depends to some extent on the tools and skills at one's command, it has its roots in an ability to analyze, to distill, to relate, and to integrate situations, events, and data. This ability can be and is developed in those MBA programs where there is recognition of the desirability of such enhancement.

An area of the "real world" that ought to be the concern of MBA programs is that of ethics and

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A recent questionnaire sent to MBA graduates of leading business schools asked if there were any revisions they would like to see in the MBA program. Some respondents wrote to say they wished they had been taught more about the "real world." This included, according to one executive in a large manufacturing company, the "real world" of management decision making with its "conflicting interests to be served, time limitations, information limitations, personal motivations, autocrat vs. committee as well as rational analysis." On reading this, we wondered how much of this kind of real world can actually be taught. Are there some things you can only learn from experience? Are there some things a student cannot take in, even if he hears them in the classroom, until he has experience *outside* the classroom? And if a teacher wants to teach the "real world," what is the best way to do it? This issue attempts to explore the ramifications of some of these questions.

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Visiting Committee meets; new lecture series is founded, Professor Wernette retires, new editor named for Michigan Business Review.

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The Real World: Theory vs. Practice

The Harvard Graduate School of Business Administration has won an enviable world-wide reputation for instruction by "the case method." This was an important breakthrough in the history of the development of American business schools. It made a business school more than an applied department of economics, and gave the business school a new independence on the campus.

The University of Chicago Graduate School of Business has moved in the opposite direction. This school completely rejects "the case method" of instruction in management education and concentrates instead on the development of "disciplines" which it is claimed will be more useful in solving real world problems than the analysis of business cases.

The University of Michigan Graduate School of Business Administration seeks the best of both worlds. Some courses are taught largely to give the students analytical tools, and necessarily emphasize theory. Statistics and Accounting would be illustrations. Others are taught primarily by the case method. The capstone course on business policy is perhaps the best example. In still other courses, theory and application are woven together in whatever proportion is deemed best suited to the subject matter itself.

Our objective is to develop the student's analytical ability and, at the same time, to give the student some practice and guidance in using it. By emphasizing the importance of both, we hope to enhance the student's effectiveness in the real world. Without knowledge and analytical ability, nothing much can be accomplished. Without the competence to use one's knowledge and ability with confidence, those skills are wasted. We believe theoretical understanding combined with the ability to use that analytical equipment effectively are both prerequisites for managerial success in the real world.

Dean Floyd A. Bond

There Are Some Things You

MOST businessmen share the strong and well supported belief that you only learn their trade by experience—by practicing it. How often has the young, newly hired MBA (who is oh-so-wet behind the ears) been told: "I don't care what college degree you've got, or what you picked up at a business school, you're no damn good to us until you learn *our* industry, our company, and just how we do things around here!" Or how many businessmen have echoed the chief executive (Michigan MBA '47) who lamented on the need for "real world" indoctrination for MBAs as follows: "They need to know the realities of corporate life, the politics, the few who benefit greatly, the many who don't. . . Let all understand the rules of the game they will play—not the game they are taught." And again, businessmen constantly voice concern over the seemingly increasing number of supermobile, job-hopping MBAs—"the spoiled brats of the corporate nursery"—whose expectations of constant success in no way mesh with "the real world."

Let's face it, a student can't learn everything about business from a professor in a classroom or from a book or even from intelligent and experienced classmates; an MBA degree is not a license to practice general management. The internship must follow. One must first learn the rules of the game. Some learn faster than others, but the learning is still essential: management decisions are



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Dr. David Rogers discusses a point with his class in business policy.

Only Learn From Experience.

By David C. D. Rogers

made in the context of a rapidly changing world, industrial and company environment.

The easy rejoinder at this juncture is to suggest that graduate business education is either too theoretical or overly specialized, and indeed one can cite examples to bolster either of these arguments.

Still, I submit that business education can be extremely pragmatic and practitioner oriented, while still admitting that there are wide gaps that can only be taught in that best but most time consuming school of all, "hard knocks."

All MBA programs impart varying amounts of "knowledge"—a kit of tools and techniques relating to different functional areas. Some of these tools are immediately useful "on the job" and employers often slot recent MBA graduates in analytical or task force jobs in hopes of obtaining an immediate return on their investment. Still, the long run return comes from the MBA's ability to use knowledge wisely. However, the acquisition of wisdom is up to each individual: wisdom can't be told or taught and is tempered by experience.

If we can't teach wisdom, we can help students and practitioners improve their ability to make wise decisions by having them experience actual business situations vicariously in the classroom. This technique, much misunderstood in the past but increasingly being adopted, is the case method.

With the case method we can partly—but only partly—bridge the gap between the classroom and "real life experience." The foundation of the case method is the belief that business skills are learned by experience and that experience is brought into the classroom via the business case. The case itself describes an actual situation, usually with some disguising of names and numbers to protect the source. The class discussion permits a pooling of the broad cumulative experience and collective wisdom found among the participants; the case merely provides a common focus. It is the skeleton, and the responsibility of the class is to clothe it with a lively, interesting,

About the author: David C. D. Rogers, Professor of Business Administration, received his A.B., MBA and DBA from Harvard, and was on the faculty of the Harvard Business School from 1958 to 1969, when he joined our faculty. His writings include numerous case books on manufacturing policy in various industries: "The Manager's Guide to Finance and Accounting," "Corporate Strategy and Long Range Planning," and "The Manager's Guide to Budgeting and Other Control Systems." The latter three are published by the Landis Press in Ann Arbor. He teaches courses in business policy, production, and control.

and intellectually challenging discussion. The greater the experience and wisdom contained in the class, and the greater the commitment to reaching a wise decision, the better the discussion.

The gathering of cases is an art in itself. Almost invariably, the case is a faithful picture of a particular business situation as seen and recorded by a case writer. A great deal of effort is expended to ensure that the "slice of life" pictured is representative. Most cases are collected by researchers who approach a company on the basis of an article in the press, a suggestion by one of the managers, a tip from a friend, former student, or associate. The case writer spends several days in the field recording data and then attempts to reproduce what he found in the space of a few mimeographed pages. Before using any of the results, he must obtain written releases from the company. Sometimes company executives visit the classes to hear the reactions of the students.

Critics of the case method abound. Some, including arch-critic Peter Cohen, author of the amusing *The Gospel According to the Harvard Business School*, start by citing poor writing, inaccurate reporting, numbers that don't add up and the lack of focus. It is easy to find outstanding examples to substantiate every charge, but these are really criticisms of the authors, not the method itself. One may pity without excusing the young case writer belting out copy

under pressure to meet the class schedule. As a 20 year veteran of the casewriting business, I can attest to how hard it is to write a good, teachable case. Often, a well focused, accurate case takes numerous market tests in class and subsequent revisions to "iron out the bugs." A room full of eager participants, each of whom has sweated several hours over a new case, is sure to find errors and ambiguities that escape the eye of even the wariest casewriter!

The case discussion poses a simple but powerful question: "What does this situation *demand* that we do?" There are no right answers, because (a) each business situation is unique and (b) there is no one right way to run a company. Each student-manager has to develop a style that is not only suited to himself but to the type of industry, company, and environment in which he finds himself. Two managers faced with the same situation may make diametrically opposed decisions—each equally workable. With a business case, the student comes face-to-face with the fact that there is no comfortable solution.

Very careful case preparation (both alone and in small groups) and a real effort to "live the case" for a few hours are essential for a good discussion and real learning. And regardless of what we may blandly tell our sometimes balky children, learning is not always fun; it requires painstakingly working something out for ourselves and hence, is both involving and frustrating. Preparing a case is like climbing a mountain. We get to what seems to be the top and peer over only to find there is still another mountain beyond. Do we slip back in frustration or keep on exploring and learning?

Case discussions can be, therefore, very frustrating for the neophyte business student and practitioner alike. The more the participant gets involved in the discussions, commits himself to a certain line of action by vigorous participation, the more he will be frustrated by the inability

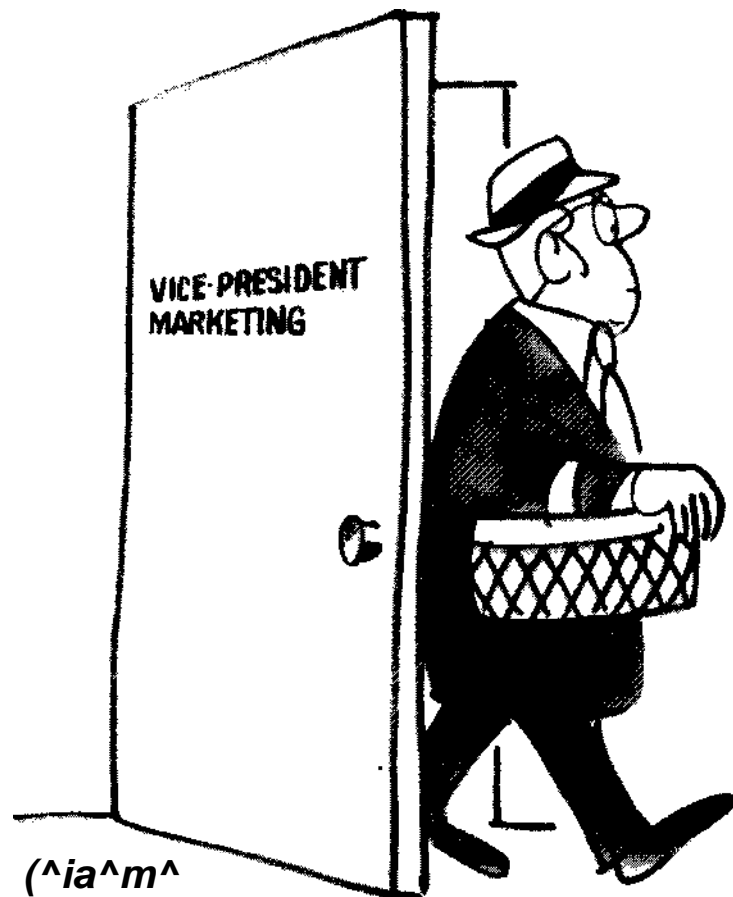
⁶⁶A room full of eager participants, each of whom has sweated several hours over a new case, is sure to find errors and ambiguities that escape the eye of even the wariest casewriter!"

of others to see the correctness of his viewpoint. He will also be frustrated by finding that he forgot a whole range of problems or facts or solutions when studying the case by himself or even in a small study group.

"But the case doesn't have enough facts—we need more information" is a common lament. Unfortunately, the same lament applies to most of the data on which management

decisions are made. A manager frequently must make far-reaching decisions on seemingly inadequate information in the face of considerable uncertainty. A case forces the participant to go through a very realistic process of making sure all relevant information *is* used and, if more is needed, specifying exactly *what* is needed and *how* the supplying of the missing data will *affect* the decision. Sometimes such analysis shows that actually the "needed" information, if available, would not change the decision. Many experienced executives claim that cases tend to be unrealistic in providing *too much*, not too little information; they are used to basing decisions on less.

Class participation is both fun and a significant learning experience. It provides a chance to put one's ideas out in public, hear them criticized



Drawing by Drucker. © 1974 by The New Yorker Magazine, Inc.

constructively, and become part of a group consensus. Sometimes it is difficult to realize that when one's pet ideas are attacked, it is not the person being attacked, but only the point of view on a particular case. Of course, just because your ideas are attacked doesn't mean they are wrong; they may be very suitable for you, but not necessarily for others. Even harder is to listen carefully to other people's divergent points of view, compare them with yours and perhaps change your mind. After all, the chips aren't really down—or are they?

A serious attack on the case method states that cases merely lead to a "consensus of the ignorant," leaving the participant without a solid understanding of "underlying fundamentals and principles." The responsibility for this lies with both the student and the teacher, but the greater burden by far is on the teacher.

Clearly, the instructor plays an unusual role. He is no lecturer or expounder of principles duly lifted from some textbook; rather, he serves as a catalyst or coach. He may be a helpful source of information, but more often he asks probing questions and has the irritating ability to put his finger on just those areas the participant has not fully thought out.

At the end of the class, the instructor may make a few summary comments or he may simply walk away to the clamor of "But what's the right answer?" "What did the company do?" "What would you do?" To him, all three questions are irrelevant. What is relevant is what each man in the class thinks *he* would do after he has identified the problems in the situation, pinpointed all the available data, made explicit any necessary assumptions, analyzed each problem in depth, and examined the possible alternative solutions and their implications. In short, each man must make a decision, and in so doing, see the alternate decisions he might have made and fully evaluate why he didn't choose those courses. Furthermore, he must understand why others don't agree with his decision.

Experienced case teachers try to make certain that the necessary tools have been learned, and give brief lectures and technical readings to provide needed background. They also summarize each case, link the pattern of cases and discussion together, and *explicitly* relate them to a conceptual framework. I summarize each case the day after the class discussion in order to allow time for the most valuable of all discussions, the informal, after-class bull sessions. And do I say what /

****'Case discussions can be, therefore, very frustrating for the neophyte. The more the participant gets involved in the discussions and commits himself to a certain line of action by vigorous participation, the more he will be frustrated by the inability of others to see the correctness of his viewpoint,'***

would have done? Of course, although after a while the participants are not particularly interested. What is really important is what *they* would do.

Often a single well-timed question by the instructor can take a class discussion embroiled in circuitous detail and raise it to a useful conceptual level. Students long remember the intellectual excitement of suddenly realizing that the whole class was charging down a dead-end road, and the challenge of finding a new direction. Even Peter Cohen in *The Gospel According to the Harvard Business School* attests to the efficacy of the case system under a skilled instructor. He gives a glowing account of how the professor's single conceptual question "pulled the plug" on the entire class discussion: "All of a sudden, the big-talking 'experts' are trying to hide behind their name cards, and the room is filled with meek and modest people wondering how they could be such fools."

He goes on to say that this kind of experience is very important because you are given a chance "not just to *make* a mistake, but to *discover* and *understand* it. And by understanding it, to *become your own redeemer*. To turn a potential waste of time and energy into a dramatic, exhilarating gain of experience. And to walk away not as the fool you were but as the brilliant thinker you are."

But no matter how well taught and explicitly linked to concepts, a case is still not reality. It is not the

harsh political give and take of corporate life as the businessman knows it. We try to increase the realism by: (1) the use of extensive industry notes coupled with several cases on competitors in the same industry; (2) lengthy cases showing different facets of the same company or problem; (3) sequential or dramatic cases that take the participant through a series of decisions over a period of time and (4) cases tied to computer simulations that try to foster the competitive group pressures of real life decision making.

How close to the "real world" do we get? To learn by experience, drop in on a case discussion in business policy or other case courses at Michigan or other business schools. Pick up a case in advance, study it, and then, watching the discussion you, too, will be in a strange industry, a different company, and a new job faced with the traditional challenge: "What the hell should I do now?" In fact you may find it so involving, intellectually challenging, and frustrating, that you'll put your hand up and volunteer some of the real world to the class.

I hope so. I'll call on you.

BEWARE THE PROCRUSTEAN BED!

Dividend interviews Professors W. Allen Spivey and Thomas J. Schriber on the problems involved in attempting to build formal mathematical models of the world.

Editor's Note: Dr. W. Allen Spivey, Professor of Statistics and Management Science, joined the faculty of the Business School in 1957, and in 1971 was the recipient of the Distinguished Faculty Achievement Award, presented by the University to senior faculty members for outstanding teaching and research. He has published extensively on optimization and forecasting, his primary research interests. Dr. Thomas J. Schriber, Professor of Statistics and Management Science, joined our faculty in 1966, and has built a distinguished record in the field of simulation. He is the author of a text entitled *Simulation Using GPSS*, to be published by John Wiley & Sons, Inc., in 1974, and has published widely on the techniques and application of simulation.

Q. *What is a model?*

Spivey: A model is a simplified representation of some aspect of the real world. Formal models can be mathematical representations of the real world, but they are far from the only kinds of models that exist. Intuitive decision-makers have informal models in their heads, based on their experience. In fact we all operate on the basis of informal models that we have developed.

Q. *Do all models require simplifications?*

Spivey: Yes. None of us has the alternative of dealing with the real world without making simplifications. All analytical procedures make them, whether informal or formal. If we did not make some simplifications we could neither understand nor communicate.

Q. *I notice your diagram has a simplification channel. Could we talk for a minute about what the diagram represents?*

Schriber: The diagram shows the closed loop through which people should (ideally) move in trying to develop solutions to problems. Starting at the "real world" box, you have to simplify in order to abstract a system of relationships with which you can work. You can then develop deductively the logical implications in the relationships. The conclusions should then be interpreted in terms of the real-world situation. As the diagram shows, judgment is needed at both the simplification and the interpretation steps; and management scientists must rely on the help and cooperation of managers at these important judgmental steps. Without communication between managers and management scientists, it's virtually impossible to close the loop.

Q. *What about simplification? Isn't there a great danger that when data is simplified it will no longer apply in a true sense to the "real world?" Don't you have to shave off a good many important subtleties when translating data into mathematical symbols?*

Schriber: It's true that if simplification is overdone, the resulting system of relationships will not be realistic, and may then be more or less worthless as far as eventual practical application is concerned. Sometimes, though, the subtleties that are shaved off in the simplification phase can be put back during the interpretation phase. This is more feasible for qualitative subtleties than for those which are quantitative.

Spivey: Analysts need to be careful not to be like Procrustes, a legendary highwayman of Attica who tied his victims to an iron bed, and, as the case required, either stretched them or cut off their legs to make sure they fit the bed. In other words, some aspect of the real world should not be like a victim of Procrustes; either stretched or amputated in order to fit some preconceived model. But we should keep in mind that not only analysts are susceptible to this danger. Simplification is necessary in *all* models, both formal and informal.

Q. *Is there ever a danger that analysts will work too much on the right side of the wavy line?*

Schriber: Yes. Some "ivory tower" types may tend to work exclusively on the right-hand side of the wavy line, devising aesthetically pleasing systems of relationships which lend themselves nicely to logical manipulation. If this work is done for its own sake, without being rooted in one or more real-world problems, probably no immediate real-world benefits will result. Managers sometimes criticize management scientists on these grounds. On the other hand, some "seat of the pants" managers may work too much on the left-hand side of the wavy line, not taking

advantage of what the management scientist has to offer. As I said before, both the manager and the management scientist need to be involved in order to close the loop. The importance of good communication between them can hardly be overemphasized.

Spivey: Model builders and managers may have to go around the entire loop of our diagram several times, refining and improving on each pass. Every time you go around you check the assumptions, the simplifications, and the interpretations and then go around the loop again, so that the trade-off between simplification and usefulness is thoroughly understood in all of its ramifications.

Q. *Are there other methods, besides model-building, of simulating the real world?*

Spivey: Yes indeed. An example is the case method, which is used in many business school curricula. Going back to the diagram, one could say that we need *both* sides of the wavy line. In courses such as accounting and statistics we provide students with analytical tools that they use in other courses in the business school such as finance, marketing, business policy, and control.

Q. *Do you think students realize the nature of the "real world?"*

Spivey: No. Many students without working experience somehow believe that decision-making in the real world is a process in which you sit down, accumulate all the relevant information that you need, and after that the decision makes itself like a hen laying an egg. In our courses, when we simulate a decision-making situation, the first thing a student wants to do is accumulate all the relevant information. That's usually a totally unrealistic way to begin.

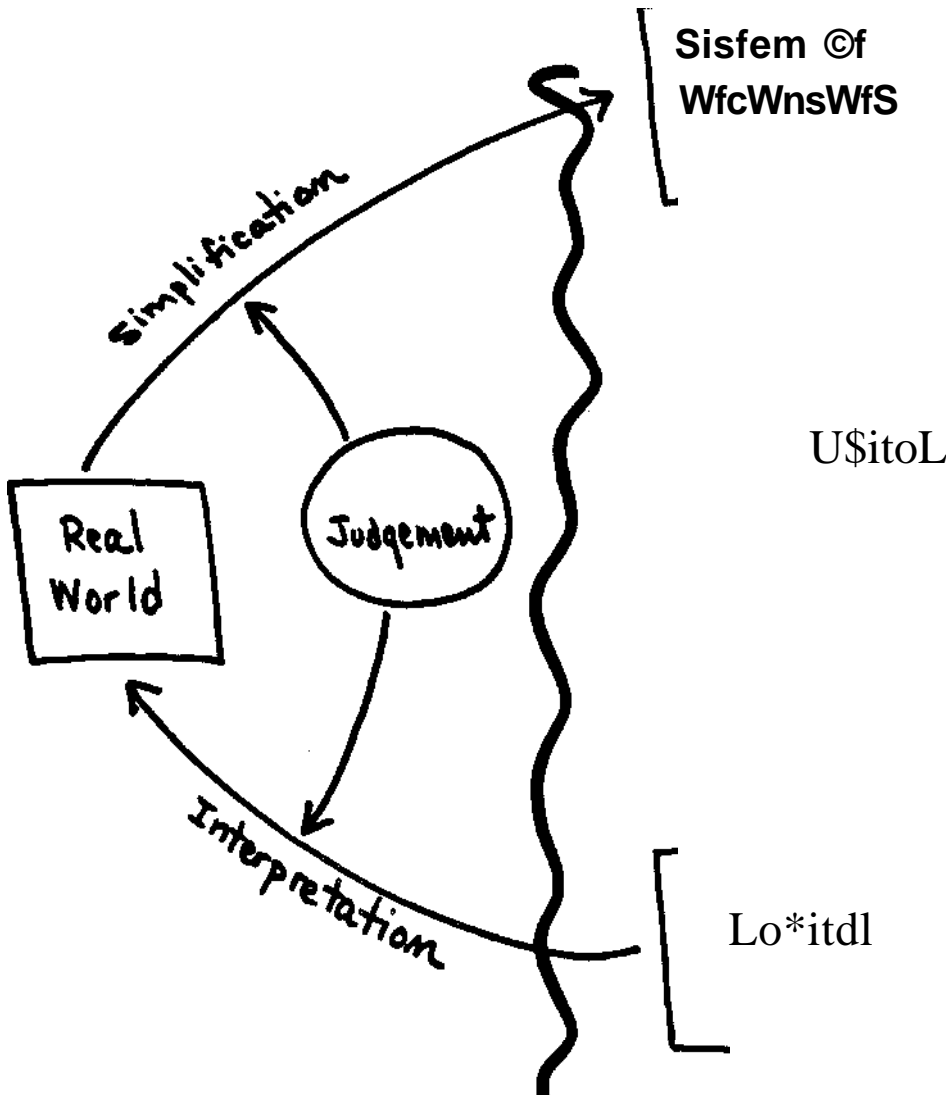
Q. *Why?*

Spivey: Because it's unrealistic to assume that all the relevant information is available. Decision-makers in the real world often have to make decisions on—say—5% (or less) of the relevant information—because the other 95% is either not known or is too expensive to get. We spend a lot of time telling students this, but often they don't take it in.

Q. *Why not?*

Spivey: I think it's just that they haven't had experience. I often see a student several years after he has graduated and he will say, "Why didn't somebody tell me that so much of the relevant information is unavailable in the real world?" The point is, we DID tell him—we tell all the students—but many of them don't hear us. It just doesn't sink in. Needless to say, our message comes across loud and clear to students who have had full-time work experience.

Continued next page



⁶⁶Analysts often cannot and, I would argue, should not tell a manager what he ought to do. He is the one who must assess the risks and make the decisions. The model, instead of producing one solution, should produce a variety of answers, depending on what assumptions are made. Which of the variety of answers a businessman chooses lies in his area alone."



Dr. Thomas J. Schriber

Q. *Is there any way you can make it sink in?*

Spivey: Ideally, the purpose of education is to cause the wavy line in our diagram to disappear. Our job is two sided. We want to teach models so that students can understand their nature and their limitations. We also want to talk effectively about how these models are applied to real world problems—and we try to give a balanced emphasis to both of these.

Q. *Speaking of the nature and limitations of models, where would you say models are most effective?*

Spivey: Model building tends to be effective in situations where there is a fair amount of information available, where it is comparatively easy to state what the objectives are, and where the procedures may be repetitive. Examples would be inventory control, production scheduling and distribution. The complexity in these models comes from the large numbers of variables involved.

Q. *And where are models not so effective?*

Spivey: Formal models have less success when one is trying to deal with situations in which the subjective element is very large, and where the amount of information is relatively small, or where you are dealing with forces that have not occurred in the past but are expected to occur in the future. I should point out as well that informal models are oftentimes no better than formal models when you are dealing with unknowns of this kind.

Q. *What is the place of judgment and intuition in formal models?*

Schriber: Research is being done to try to capture in a formal model whatever it is that a good decision maker goes through when he uses informal models to make decisions. For instance, researchers have worked very closely with people making stock selections for portfolios, trying to quantify what they do. Another example is the attempt to determine what elements of a credit application a good credit

manager takes into account when he assesses who is a good credit risk.

Q. *And did they succeed?*

Schriber: They did succeed in producing computer-based models which could approach the record of the good credit manager in a number of cases. But these computer models can't bring judgment to bear the way a credit manager can when the problem environment changes. The computer can only take changing circumstances into account to the extent that it has been taught (i.e. programmed) to do so.

Q. *Can you tell me what different kinds of formal models there are?*

Spivey: There are models based on probability theory—where the problem is subject to random variation in a number of variables. Another type of model is deterministic—those that assume the problem is not subject to random variation. A chief advantage in both types of formal models is one's ability to interrelate a very large number of variables. We have formal models to help solve inventory control problems, queueing models, production models, to name a few.

Q. *What exactly is simulation?*

Schriber: Simulation is a generic term with a wide variety of meanings. Suppose we say that simulation is a numeric technique for reproducing the dynamic behavior of systems which operate in time. In this restricted sense, simulation involves mimicking real world situations on an event-by-event basis. Such simulations are usually performed with the aid of a computer. As a simulation model is moved forward against a background of simulated time, data are collected describing the nature of the model. These data can then be analyzed to make inferences about the model's properties. By modeling alternative strategies in this way, that strategy which performs in relatively superior fashion can be identified.

Q. *What are the advantages of simulation?*

Schriber: One of the advantages of

the simulation technique is its ability to capture a high degree of realism. Numeric simulation models really don't require sophisticated mathematical manipulations. As a result, the danger of oversimplifying things, just to support subsequent mathematical maneuvers, is greatly lessened. The price paid for this, however, is that the model-builder must perform a post simulation analysis of the statistics generated during the course of a simulation, and this is difficult to do.

Q. *And what about the disadvantages?*

Schriber: Numerical simulation can consume large amounts of computer time, and thus be expensive. Furthermore, the simulation technique has no ability to identify the universally optimal strategy for a given situation. Simulation really is relatively "brute force" in nature. Nevertheless, there is a real payoff associated with simulation modeling. Some companies are sold on simulation to the point that they won't build a new production facility, for example, until they've first simulated the behavior of the proposed design.

Q. *What can one expect from a mathematical model?*

Schriber: Building a model compels a person to state a problem clearly. The mere fact that you have to submit to that discipline in order to use the model may make the model unnecessary. People like to think that models can provide simple answers to very complex questions, and in this way they expect too much and are disappointed. One of the reasons so many model builders are frustrated in industry is that they feel managers do not work with them closely enough to define a problem clearly. You need to have the decision-maker define what he wants to do operationally.

Q. *Are there problems in doing this?*

Spivey: Yes. A decision-maker does not necessarily appreciate the kinds of things that need to be shaken down before anyone can apply analytical techniques. A manager may say "Give me a model" instead of saying "I want a model that will do this and this because I want

to know this." Other times managers will go in the other direction and ask a model to give them too many different things, or will state objectives that are inherently contradictory. It is just as important to understand limitations as to understand advantages.

Q. *How can a manager and an analytical person work together best?*

Schriber: The manager should try to evolve, in cooperation with the analytical people, sharper definitions of problems and of alternatives. Analysis often cannot and I would argue *should* not tell a manager what he *ought* to do. He is the one who must assess the risks and make the decisions. The manager may want to play the "what if" game. What if this and what if that? The model, instead of producing one solution should produce a variety of answers, depending on what assumptions are made. *Which* of the variety of answers a businessman chooses lies in his area alone.

Q. *Can analysts and managers communicate easily with each other?*

Spivey: Not always. Sometimes the model-makers make models that are satisfying in the sense that they are susceptible to manipulation, but in fact they may be highly complex answers to a question that should never have been asked. Sometimes the decision-makers go off and say "I can't understand anything about what those people are saying," and the two groups then can't get together and pool their resources, so to speak.

Q. *How can communication be made easier for managers and model-builders?*

Spivey: I'd like to say to the managers: "Try to be open-minded about the use of these tools and the possible advantages they may have for you," and to analytical people: "Have a healthy awareness of the real world which is, in reality, some great, non-linear, dynamic, stochastic, optimization problem."

"Many students without working experience somehow believe that decision making in the real world is a process in which you sit down, accumulate all the relevant information that you need, and after that the decision makes itself like a hen laying an egg. In our courses, when we simulate a decision-making situation, the first thing a student wants to do is accumulate all the relevant information. That's usually a totally unrealistic way to begin."



Dr. W. Allen Spivey

JLjCyCcJL JLAJLJ_J_g to Ride the Elephant



Richard Duke, director of the Environmental Simulation Laboratories, explains how games work as models of the world, and how they differ from mathematical models in teaching how systems and interacting subsystems behave.

Editor's Note: Richard Duke, U-M Professor of Regional Planning, is the founder and director of the Environmental Simulation Laboratories, a programmatic research unit of the School of Natural Resources, which explores and develops techniques for the facilitation of communication about urban planning and community development. He has published extensively on games, and is currently finishing a book called *Gaming—The Future's Language*, to be published by Sage Publications next fall.

Q. How are games used as models of the real world?

A. There are dimensions of life today that were not previously true. Games help us to understand and to cope with those new dimensions. They help us construct a realistic image in our heads as to how systems interact.

Q. What dimensions are different?

A. There are three major differences: 1) The problems of today are infinitely more complex than in the past. They involve systems and interacting subsystems that go beyond the normal human ken and that do not yield to conventional jargon or traditional forms of communication. 2) The sheer quantity of individuals who want to be part of a dialogue about change is large and growing rapidly, 3) There is a growing personal

urgency about change because the solutions pursued today constitute a more pervasive intrusion into the individual's life than previously.

Q. *In what way?*

A. In earlier times, the King's men may have come for the taxes, but in between their visits your life went on pretty much unaffected by outside influences other than those of the elements and what happened within your own family or immediate clan. Now the Internal Revenue Service comes every week, and unknown Big Brother is involved in thousands of ways with the daily actions of our lives.

Q. *And how do games help us cope with these new dimensions?*

A. They can help us to understand the complexities of inter-acting systems.

Q. *Don't mathematical models do that too? What is the difference between building games as models of the real world and building mathematical models?*

A. The languages they use are very different.

Q. *What do you mean?*

A. Mathematical model-builders use a sequential language to describe their model. Mathematics is a sequential language—so is English. A computer works in linear fashion. It does it very quickly, of course, and so you may feel you are getting a gestalt, but you are, in reality, getting data in a linear way. Sequential languages fail to convey a gestalt, and so the complexities of today cannot be comprehended or communicated except with the greatest of effort. Games as models *do* convey a gestalt.

Q. *Can you give me an example?*

A. Yes. Here's how the two kinds of models might work. Suppose a simulation model deals with the transportation system for the City of Ann Arbor. A councilman is being asked to vote money for improvements that the model says are required. He may say to the mathematical model builder, "Tell me how the model works." The model builder then has to use a long stream of words to describe what is an entity. The embellishments of the model or the inadequacies of the model may not get communicated. It's hard to convey a complex reality with a linear chain of thought.

Q. *How does gaming differ from that?*

A. It allows the councilman to place himself right in the middle of the system. Whatever he does bumps up against the edges of the system. If you describe the model in English, you might say "A to B is so and so. B to C is something else again." But if he is in the middle of the system, he sees A to B and B to C at the same time. In other words, a linear, sequential language will describe to you an elephant. He has a trunk, large ears, etc. But a good game will allow you to *ride* the elephant, which will give you quite a different understanding of the elephant than reading or listening to a description.

Q. *Give me an example of how games teach you what it's like to ride the elephant?*

A. Suppose you asked me to tell you how a certain industry works. I could talk to you or write you a memo about the industry. This would be a linear, sequential way of communicating. Or, I could show you a factory in a three dimensional attempt to explain the industry. Or

I could put together a game based on the industry and say, "O.K. Now you're president of such and such a corporation. Run the company." That would be an "n-dimensional" way of communicating the intricacies of the industry.

Q. *A person in that game would probably make some pretty bad mistakes, wouldn't he?*

A. Probably. But once you set up the basic model you give the individual freedom to operate as he wants. If he breeds disaster for himself, you leave him alone and let him bump around the system. It's an environment for learning. If he were experienced, he probably wouldn't do many of the things he does, but he learns by doing.

Q. *Can games really teach judgment though? Can someone really get the equivalent of years of experience by playing games?*

A. A game is a conceptual map. You might be a better junior executive if you understood how the whole company operated—and what outside systems affected it. But it might be ten or more "real world" years before your job would put you in a situation where you would be required to think about or understand some levels of complexity. At the junior professional or even middle professional level, people are simply not in a central position to view the whole system. A game, though, can put you there, and after two days of playing you could learn quite a bit about how all these complex systems interact. And that understanding—that conceptual "map"—could make you more effective at whatever level you operate.

Q. What is the "rule of three?"

A. In gaming, we have found that three people working together tend to make better decisions than one person alone.

Q. Why is that?

A. We think it is because three people tend to look deeply at any decision they make. One person, being unchallenged, tends not to see every alternative. Two people give you a static situation. Each person sticks to his viewpoint, and it's hard to get any movement. But with three people you get an inherent dynamic imbalance, and the result is a pretty thorough exploration of alternatives. Beyond three, things start breaking down. Four is a static number, and when you have five, communication is impeded by too many people getting into the act.

Q. Are you saying that a committee of three is better than one individual? What are the implications of that for decision-making in the real world?

A. The rule of three would apply only in gaming. Once you get into an operating situation in the real world, there are other considerations which make it necessary to have a single decision-making individual. You have to have a clear line of authority and know who is responsible. And whoever is responsible has to be able to act. But if that person wants to understand the situation better before acting, he should invite in two of his colleagues and have a discussion.

Q. Suppose I wanted to develop a game. What would I need to do?

A. First, you would need to know the answers to certain specific questions.

Q. What are they?

A. Who is the client? What is to be the context of use of the game? Who will be the participants (Who will participate as sender? Who as receiver? Who as observer?) What is the primary communication purpose of the game? (To establish dialogue between people with diverse professional backgrounds? To project information to an audience? To extract information from an audience as with a questionnaire? Or as a

66 When the real world sequence deals with something not quantifiable but on which judgments must be made nevertheless, a good game puts human beings in the situation and lets them do their own mental evaluations as they go along J⁹

motivational technique?) What subject matter is under consideration? And finally, what resources will be available for the development and use of the game?

Q. How can the game be evaluated when it's finished?

A. As I said, a game is a conceptual map. The first question, then, must be: Does the conceptual map correspond to reality and has it been successfully translated into a game? Does the game do a good job of conveying the system gestalt, and is the system responsive to player actions?

Q. Tell me about an actual game, developed at the Environmental Simulation Laboratories, and how it is played.



Dr. Richard Duke

A. There is a game (called W.A.L.R.U.S.) which focuses on water pollution problems in Walton, a hypothetical city near a large bay. In one recent game, players were faced with this problem: although the city of Walton has its own sewage treatment plant, two neighboring townships are dumping untreated wastes into the bay at such a rapid rate that Walton's city fathers will soon face a major pollution crisis.

Q. What did the players do?

A. The game began with a flurry of land manipulations and other business transactions as players sought to increase their land holdings in Walton and the surrounding townships. But as the pollution problems became more urgent, players representing the city began forming a coalition and threatened the townships with a series of austere measures, including a head tax on township residents who worked in the city. Eventually the township players agreed to share the costs of an expanded sewage facility that would treat effluent from the townships. When players have finished this game, they have a better understanding of the complexities that enter into water pollution problems.

Q. Have games been developed at the Environmental Simulation Laboratories that apply directly to the real world?

A. Yes. "Metropolis" was developed as a means of studying fiscal problems of the city of Lansing. Other games along this line include "M.E.T.R.O." which deals with regional planning in the Lansing area, and "M.E.T.R.O.-APEX" (Air Pollution Control Exercise) which helps clarify the roles of industries, land developers, environmental agencies and the federal and local government in combating air pollution. This last game requires some 50 players and about 40 hours to complete. It is currently in use at over 100 American universities and has been translated into French, German, Spanish and Japanese for use overseas. This game deals with real problems under simulated conditions. We'd also like

Continued on page 21

the Real World

*"Every man takes the limits
of his own field of vision
for the limits of the world."
— Schopenhauer*

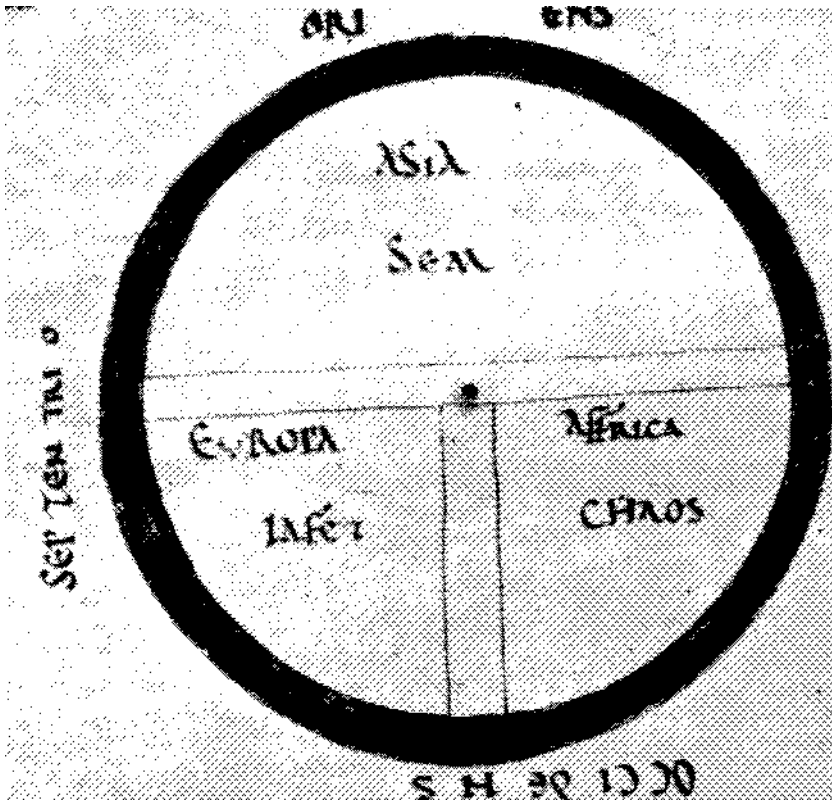


In this map, drawn on a clay tablet about 500 B.C., the earth is a circular disc surrounded by an outer ocean. The triangles stand for mythical islands.

All civilizations have created their own image of a real world. Among primitive people, this was a portrait of their immediate surroundings, and it had two main characteristics. It was ethnocentric, it showed the features that were part of the essential, common fund of knowledge of the people: fords and wells, paths and anchoring places, landmarks to serve as guides to the hunter, the trapper, the fisherman. It was a very limited world, inhabited by "The People," for it was not until commerce and exchange brought various tribes into contact that the existence of other worlds was admitted. And these early images of the real world tended to be circular, partly because that real world was limited by a circular horizon, and partly because the circle was always regarded as a magic, a perfect thing.

But these circular images were not really without certain points of reference, as we would put it today, they were oriented. Their orientation was determined by celestial phenomena that primitive people, closely observing their environment, knew well: the spring and the fall equinox, the summer and the winter solstice. In this manner the endless, undivided circular world was divided, and the foundations of something we take for granted, the existence of the cardinal points north, south, east, and west, were foreshadowed.

To these early images of the world, one universal rule can be applied. The center, that part showing the dwelling place of the people whose experts, priests or magicians or astronomers, designed the image, was accurate enough to be recognized, especially if names of such features as rivers and mountains and cities were applied to it. On a map of the world drawn on a clay tablet in Babylon, cca. 400 B.C., the earth is a circular disc, surrounded by an outer ocean. The Euphrates River flows across it towards the Persian Gulf; the city of Babylon lies on the river; and the surrounding countries are clearly identified. The triangles beyond the ocean stand for mythical islands, they are the



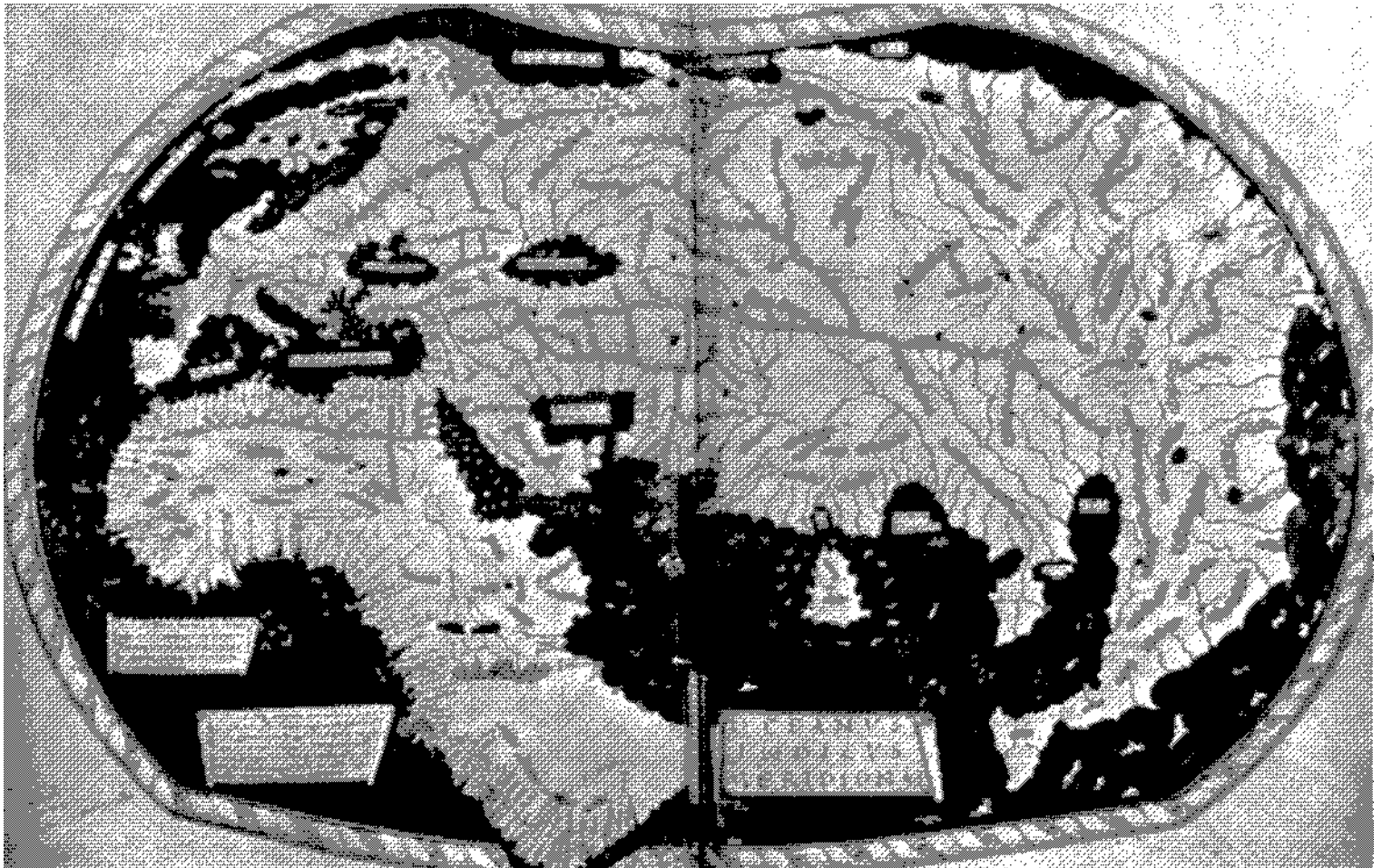
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dwelling places of unknown creatures and represent that element "beyond the horizon" that has beckoned the adventurous, the discoverers of all times. Clearly, this image of the world of the Babylonians is a careful map of things known and a vague and, to some, enticing representation of things unknown.

The real world of the Babylonian map is a flat disc, and similar conceptions can be found among many civilizations, East and West. The Greeks transformed this flat earth into the sphere that it really is, and though no Greek map has survived, enough evidence exists not only to underline the momentous significance of their discovery, but to indicate the theoretical and experimental methods they employed. To the Greeks the sphere was *the* perfect object; the world therefore had to be spherical. But being also practical people, they observed eclipses, and saw the circular shadow cast by the earth—and only a sphere can cast such a shadow—and they knew that

This map drawn in the 12th century divides the world into three continents.

The map of Martellus, drawn in the late 15th century, is most accurate in its portrayal of Mediterranean and Western Europe, but also shows the results of half a century of Portuguese voyages leading to the rounding of the Cape of Good Hope.



it is the tip of the mast of an approaching ship that can be seen at first, long before the vessel itself comes into view, an observation underlining once more the curvature of our planet.

The Greeks not only had an accurate image of the real world, they measured its dimensions as well. Proceeding by simple observation, clear logic, and a sound knowledge of geometry, the Alexandrian astronomer-geographer Eratosthenes established the circumference of the earth with an error of less than 4 per cent, two and a half centuries before Christ.

The destruction of the classical world produced a severe setback, and the emerging world of the Middle Ages inherited but little of the skills and knowledge of its Greek and Roman predecessors. Yet, in a discussion of images of the real world, we must remind ourselves that not all was lost, and that side by side with the restrictions and taboos imposed by literal interpretations of Holy Scripture, such important

features as the spherical nature of our earth were never completely obscured. But Medieval Europe was satisfied with far less than Greece and Rome, and for a time at least the real world, once more, became a flat disc.

The simple design of a world map, drawn in the 12th century to illustrate one of the most famous medieval encyclopedias, is circular in outline, limited by an outer ocean, and divided into the three continents of Europe, Asia, and Africa. Each is identified with one of the sons of Noah: Shem, Ham, and Japheth; the divide between Europe and Africa is the Mediterranean Sea, while the Don River separates Europe from Asia, and the Nile is the boundary between Asia and Africa. In the three centuries following the making of this map, many a detail was filled in, many rivers and lands and cities were named and correctly located, but the outer fringes of the world shown on those maps were no longer real, they were once again the abode of monsters and marvels,

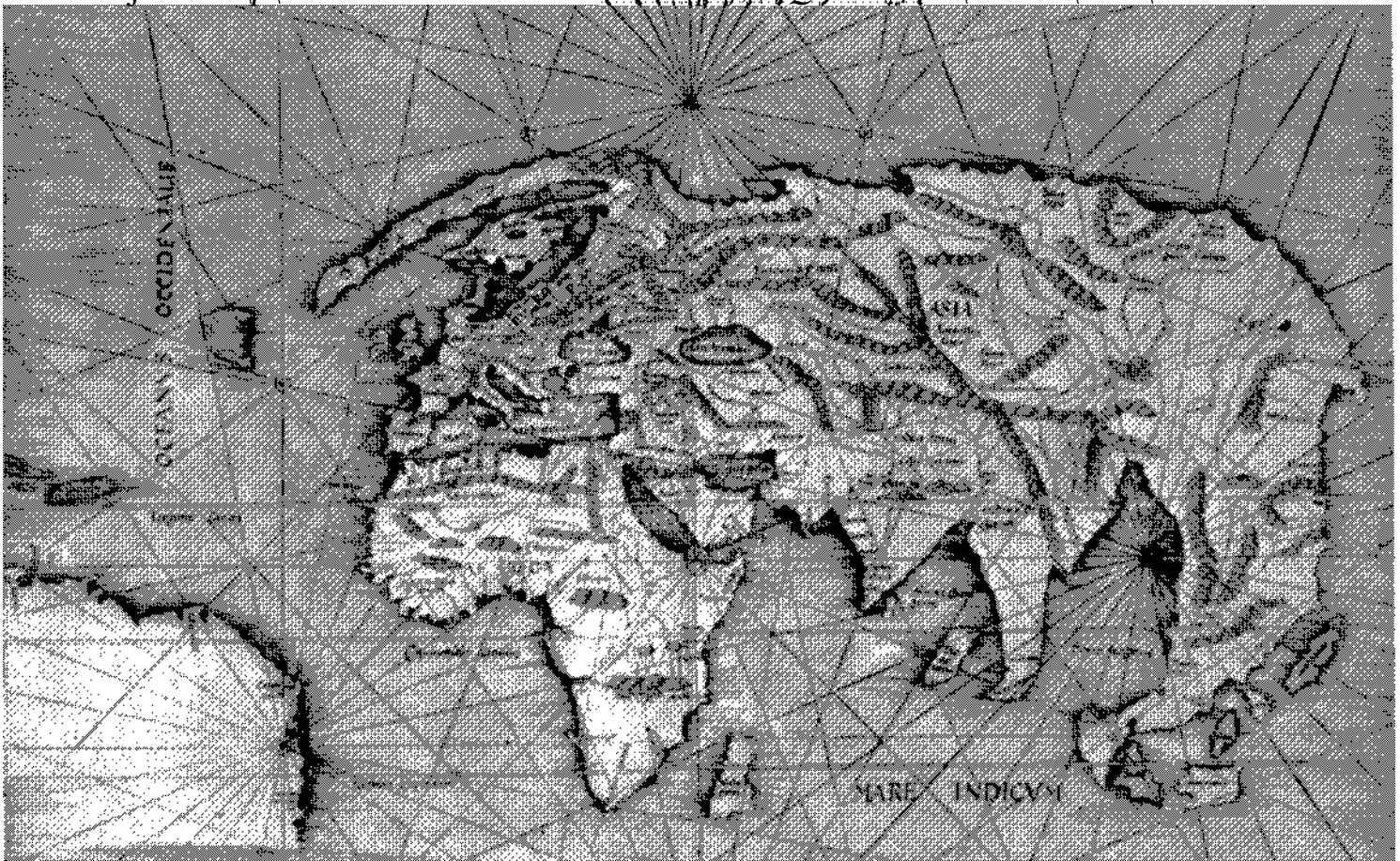
representations of an unknown and feared world.

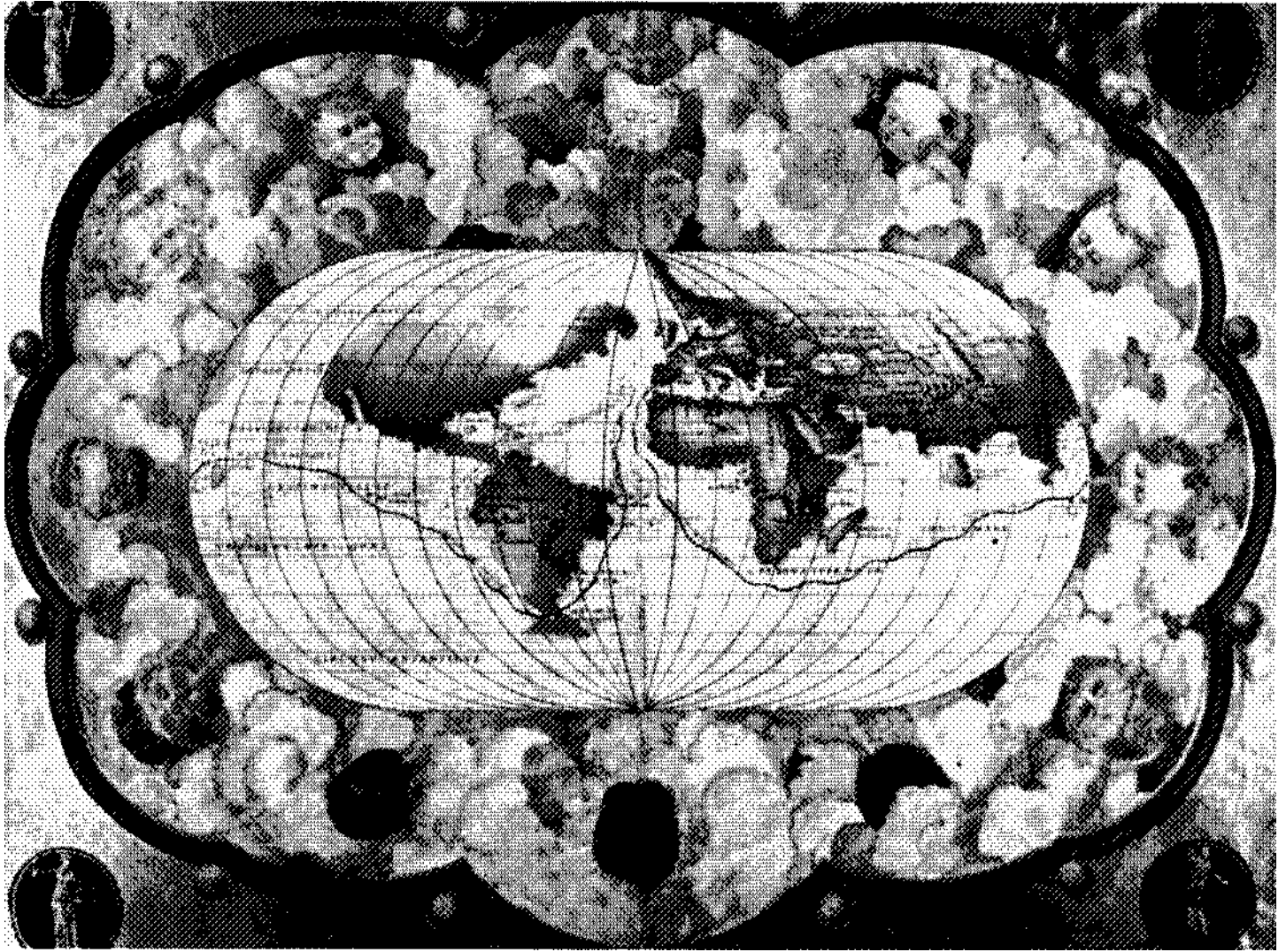
The expansion of trade, the desire to spread the message of Christ, and the longing to find out about faraway places and peoples managed, during the period between 1250 and 1490, to break up the rigid and restricted framework that had long dominated the world image of the medieval West. Missionary, diplomatic and commercial voyages across Asia brought back knowledge of parts of India and China, and led to the circumnavigation of Africa. The real world of Renaissance Europe expanded to new horizons, as shown by the world map made by a German mapmaker working in Florence, Henricus Martellus, in the closing years of the 15th century.

The map of Martellus conveys the excitement of discovery, not only the discovery of new trade routes, new markets, new shipping lanes, but the re-discovery of a great storehouse of information accumulated in Alexandria thirteen centuries earlier, the re-discovery of the

In this map by Waldseemüller, drawn only about 25 years after Martellus' map, the outlines of Africa, of the Near East, of India, are very close to being accurate, but most importantly, across the Atlantic, there is the shoulder of Brazil.

©B* r/p/s YsixERS-ufs KXPk \r~ prf; ^'Ommi\moK\n iR.\mno\eH





This elegant map made in 1540 shows a line running from Spain around South America to the Pacific, and from the Pacific around Africa back to Spain. This is the track of Magellan's ship *Victoria*, the first ship to sail around the world, 1519-1522.

geographic writings of the late Greek geographer Ptolemy. The map is in fact based on these two sources of information, and while it is most accurate in its portrayal of Mediterranean and Western Europe, it also shows the results of half a century of Portuguese voyages leading to the rounding of the Cape of Good Hope, and an as yet distorted but promising image of southern Asia.

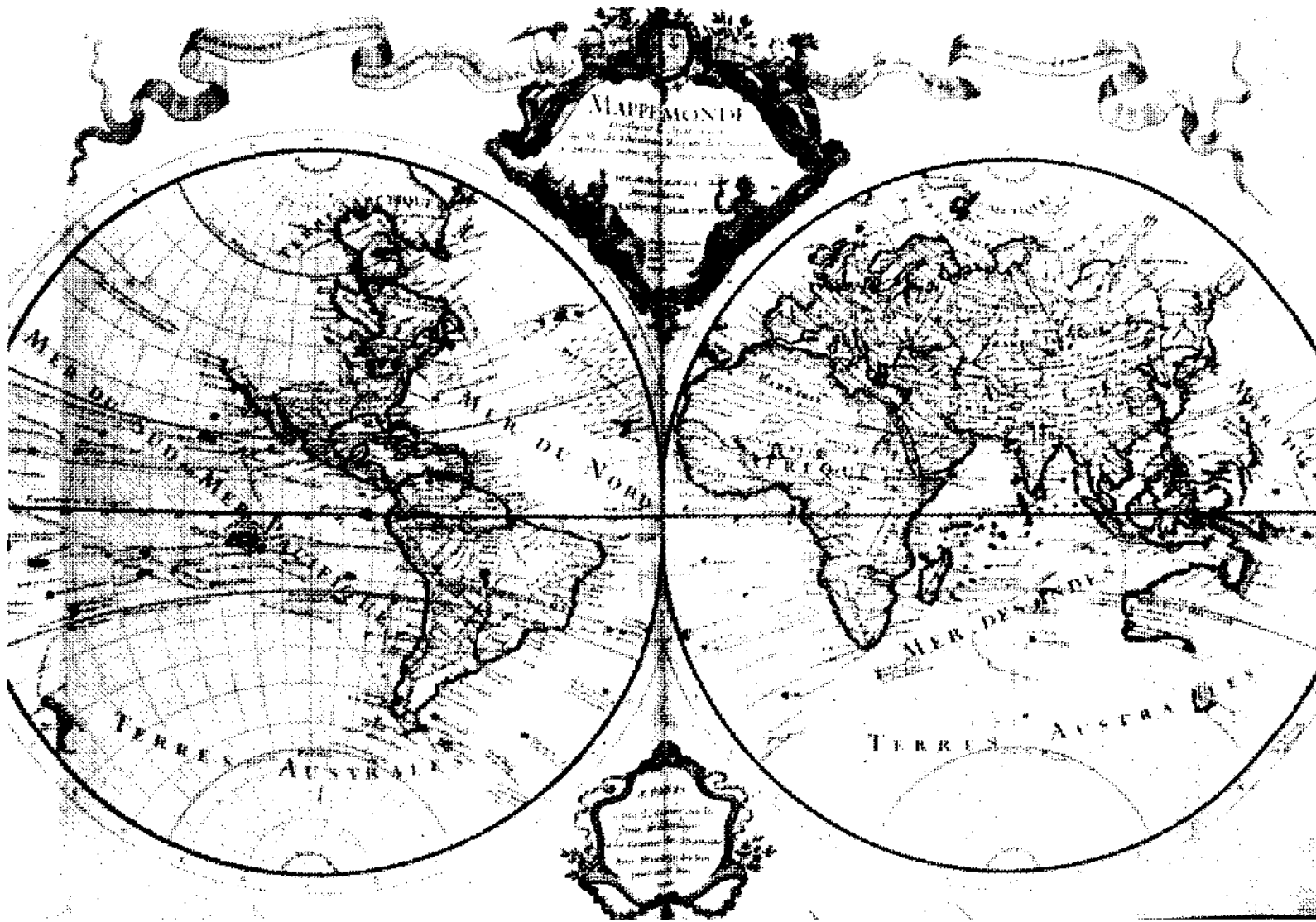
The quarter-century separating Martellus' world map from the "General Map of the World According to the Mariners' Tradition," 1489-1513, was one of the great periods of history. The author of the map of 1513, the humanist-artist Waldseemüller, had, only six years earlier, suggested that the New World, recently discovered, be named after

the Italian explorer Amerigo Vespucci, *America*. In this map we see a world that bears many traits similar to its predecessor, Martellus' map, yet several important, positive, new statements as well. The outlines of Africa, of the Near East, of India are very close to being accurate, but most importantly, across the Atlantic, there is the shoulder of Brazil, part of the New World.

Within less than thirty years, another giant step was taken by the men who drew images of the world. The elegant map by the Italian mapmaker Agnese, part of a manuscript world atlas, seems as far removed from its predecessor as that map was from the simple medieval designs. Agnese's map, made in 1540, has a clear-cut outline of the

Americas, including the Gulf of California; and provides accurate images of Africa, of southern and southeastern Asia, and of most of Europe except northern Scandinavia. Most important of all, it is a map that does not pretend to substitute fantasy for reality, and simply omits the unknown. A final, and truly important feature of Agnese's 1540 map of the world is the line running from Spain around South America to the Pacific, and from the Pacific across the Indian Ocean and around Africa back to Spain: the track of the ship *Victoria*, the only survivor of Magellan's squadron, the first ship to have sailed around the world, 1519-1522.

The remaining years of the 16th century, and those of the 17th, saw



When Delisle published his map of the world in 1709, the greater part of our world was known, although northwestern and northern North America and northeast Asia were as yet unexplored, and roughly half of Australia was unmapped.

further voyages and discoveries, more landings and excursions, on land and at sea. When Guillaume Delisle published his map of the world in two hemispheres, printed in Paris in 1709, the greater part of our world was well known. Northwestern and northern North America and northeast Asia were as yet unexplored; roughly half of Australia remained unmapped. Antarctica's existence, though long postulated in theory, was yet to be proved in practice. But the world as it appeared to men of the opening years of the 18th century is one familiar to us and the next two hundred years were spent perfecting the details, mapping coastlines, following rivers to their source, crossing deserts, scaling high

mountains, even to conquering the Poles.

Frenchmen measured the size of the earth within half a century of the publication of Delisle's map; other Frenchmen devised the metric system in the closing years of the 18th century, basing it on the surveys of their predecessors; Englishmen traversed interior Africa; Americans and Norwegians reached the North and South Poles during the first years of the 20th century. And to men living in the last third of that century, the real world was revealed, for the first time, from outer space; a small planet, infinite in its variety, the earth that their ancestors had sought to show in simple and in sophisticated ways across the ages.

About the author: George Kish, professor of geography, is a native of Hungary, educated in Budapest, Paris, and Ann Arbor. A member of the U of M faculty since 1942, his major interests are the geography of Europe and the Soviet Union, and the history of geography, cartography, and the discoveries. Past Chairman of the U.S. National Committee for the International Geographical Union, he now serves as Vice-Chairman of the Commission on the History of Geographic Thought of the IGU, and as Secretary-Treasurer of the IGU Working Group on Old Maps. His publications include some 145 items, articles and books, in English, French, German, Italian and Hungarian.

Among Ourselves

An informal collection of items, including news of the faculty? of alumni, and of the school, and assorted other information, opinion or comment that we think will interest you.

Professor J. Philip Wernette Retires

J. Philip Wernette, Professor of Business Administration, who has taught for twenty five years at the University of Michigan School of Business and who has been founding editor of the *Michigan Business Review* for as many years, has retired from teaching degree courses and editing. He plans to devote his time to writing, public speaking, and his work as an economic consultant. This spring he will again be teaching in two of the executive development programs at the School.

Professor Wernette earned his A.B. from the University of California and holds two master's degrees, one from the University of Southern California and one from Harvard. His Ph.D. is from Harvard, where he taught for 18 years in economics and business administration, with temporary stints on financial advisory commissions in Colombia and in Peru; a year in Europe as a Fellow of the Social Science Research Council; and a year in Washington, D.C. where he served as War Goods Price Coordinator at the Office of Price Administration during World War II. From 1945 to 1948, he was president of the University of New Mexico before joining our faculty in 1948.

During his academic career, Dr. Wernette has written eight books and 120 articles—mostly on economics and business subjects. One research



Dr. J. Philip Wernette

article of a different nature summarized the extensive range of knowledge of Sherlock Holmes. This article received widespread attention from the Baker Street Irregulars, and further research on Sherlock Holmes is in Wernette's future. Currently, he is working on his ninth book, which deals with the economic basis of a good society.

Professor Wernette will continue as a director and economic adviser to the Ohio Citizens Trust Co. of Toledo. He also plans to keep up his custom of the past 25 years of a daily noon swim at the Intramural Sports Building on campus.

Dr. Patricia Shontz Appointed MBR Editor and Director of Publications

Dr. Patricia Shontz is the newly appointed editor of the *Michigan Business Review* and director of publications for the Graduate School of Business. Dr. Shontz was an editorial writer and economist for the *Detroit News*, and the author of a nationally syndicated column on economics before joining our faculty as professor of business administration.

In 1970, Dr. Shontz received the G. M. Loeb Award as the outstanding financial columnist in the nation, and in the same year was honored by a joint resolution of the State Legislature in appreciation of her economic writings. She also received the Outstanding Alumni Award of Wayne State University in 1972, and was chosen one of the Top Ten Working Women of Detroit in 1971.

Currently, Dr. Shontz is a director and consulting economist for the Manufacturers National Bank of Detroit, and on the Board of Directors of the Detroit Edison Company and of Jacobson Stores, Inc. She is a member of the U.S. Census Advisory Board, the American Economic Association, the Economic Club of Detroit, and has served as president of the Detroit Chapter of the American Statistical Association.

Dr. Shontz's editorship of the *Michigan Business Review* will begin with the March issue.

Who is the "Average" MBA? What is his salary?

The average base salary of MBAs who graduated eight to ten years ago from leading business schools is \$25,620, according to a study of 4,060 MBAs conducted by MBA Resources, Inc., a New York based executive recruiting organization. The survey also found that the top ten per cent of the sample earns from \$35,000 to well over \$100,000 per year.

The sample consisted of MBA executives who had received their degrees from 13 of the nation's leading business schools. The schools in the study included: University of California at Berkeley, Carnegie-Mellon, Chicago, Columbia, Harvard, Michigan, New York University, Northwestern, MIT-Sloan School, Stanford, Dartmouth-Tuck School, Virginia and Wharton.

Purposes of the study were to determine the characteristics of the "average" MBA and the influence of industry, job function, school and other factors on the MBA's salary; to determine characteristics of the high salary achiever and to evaluate the relationship of a business school's "image" to the executive positions held by its graduates.

The study found that the "average" MBA performs either a financial or marketing/sales function, is most likely to be employed by a service or consumer products company and has an average annual base salary of \$25,620. The survey found that job changes do not necessarily result in an increase in base salary.

One major outcome of the study was the development of the "MBA Salary Formula" which can be used to calculate a benchmark against which personal salary achievement can be measured. The formula is part of a nine page Executive Summary, available by writing MBA Resources, Inc., 445 Park Avenue, New York, New York 10022.

Learning to Ride the Elephant Continued from page 14

to apply game simulation techniques directly in the real world.

Q. *How?*

A. We'd like to set up an experimental "laboratory community" where computer equipment would be housed at City Hall for use by local decision making bodies. The computer would store a vast variety of real information—on city economics, school population, traffic flow, population density and land use patterns, etc. When an important decision comes up, the city government and private groups would use the real data stored in the computer to test their views within the context of the city's total makeup.

Q. *The games you've talked about have mainly to do with urban problems. Have games been developed to deal with other kinds of complexities?*

A. Yes indeed. There is a new game out now called "The Marriage Game" which is designed to give high school students some idea of the complexities of marriage. At the moment it would be possible to identify 10,000 different games, and probably two or three thousand new games come out every year. They cover every subject imaginable—from ecology to international relations—and from health care to personnel management.

Q. *Is there an index on what games are available?*

A. Yes. Several. The best known is called "The Guide to Simulations/Games" by Zuckerman and Horn. It lists every game by author, gives data about how each game is played, the material required, the cost of the game and some comment on the game's quality. The last edition ran over 500 pages.

Q. *What are the limitations of gaming as a technique?*

A. There are several. Games are very problem specific in the sense that a given game only applies in a pre-specified situation. They are also very audience specific. A game devised for legislators would probably not

be appropriate for college students. They are expensive and cumbersome because of these two factors, but they are very powerful.

Q. *And what are the advantages of gaming as a technique?*

A. If there is a problem we want to talk about, we can build a game to talk about just that problem. In a sense, each game is a new language, especially constructed to talk about a particular problem.

Q. *What do you mean, a new language?*

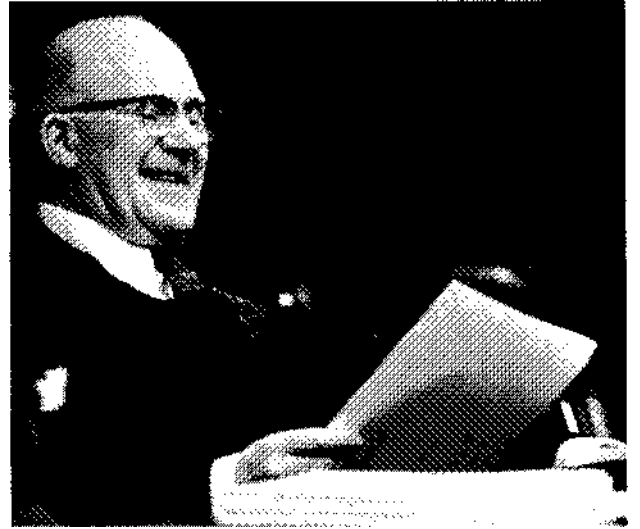
A. Every language is a set of symbols along with specific rules governing their use. When we build a game, we set up a new set of symbols and a new set of rules governing their use and interaction. A game articulates the model in a human mode.

Q. *What does that mean?*

A. In a good game, at any point that the real world sequence deals with something not quantifiable but on which judgments must be made nevertheless, the game puts human beings in the situation and lets them do their own mental evaluations as they go along. Remember, decision making is a gestalt process rather than a logical, sequential process. By that I mean that you juggle a lot of variables simultaneously when you make a decision. Gaming gives you an imagery about how complicated variables interact.

Q. *So then games can provide models of the real world different from those provided by mathematical techniques?*

A. Yes. The primary advantage, perhaps, is that they can communicate gestalt and that they can provide a flexible set of abstract conceptual tools which will let the participant view new and emerging situations in a way that permits comprehension. We all live in a world we don't understand. The edges of our system are always bumping into someone else's system. Games can help us to understand the multi-faceted dynamic Gargantua that is the "real world."



Visiting Committee Holds Annual Meeting

Four years ago, Dean Floyd A. Bond established a "Visiting Committee" to provide closer ties between the School and the business community. Since then, members of the Visiting Committee, all of whom are top corporate executives, have visited the School annually to discuss various ideas and suggestions with the Dean and members of the administrative staff of the School, to meet with the students, to attend lunch with the faculty, and to be brought up to date on the School's plans and activities.

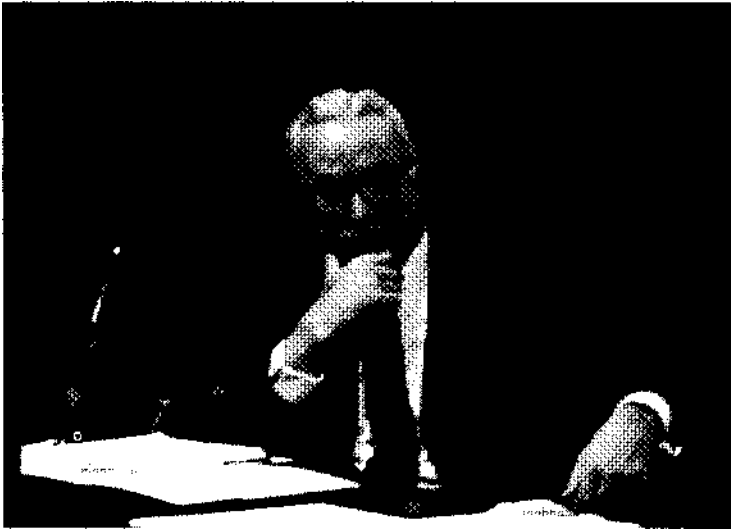
This year the members of the Committee first met with students for coffee in the executive lounge, and then moved to the board room. There they discussed numerous matters of importance to the School, including the growth of the business degree programs, a profile of the MBA entering class, scholarship and loan funds for MBA candidates, the Affirmative Action program of the Business School, the MBA evening program, and the plans of the Division of Management Education.

After lunch with the full professors at Inglis House, each member of the Visiting Committee gave a brief summary of the view from the chief executive's chair of each of their industries.



Pictured at top of page, H. Glenn Bixby, Honorary Chairman of the Board of Ex-Cell-O Corporation. Above, Lynn A. Townsend, Chairman of the Board, Chrysler Corporation. Right, Clayton G. Hale, Chairman, The Hale & Hale Company. (Photos by Stuart G. Abbey)





Membership on the Committee is well balanced both geographically and functionally. Members include:

H. Glenn Bixby, Chairman of the Board, Ex-Cell-O Corporation

O. C. Carmichael, Chairman of the Board, Associates Corporation of North America

Peter B. Clark, Chairman of the Board, *The Detroit News*

Donald C. Cook, Chairman of the Board, American Electric Power Company, Inc.

R. C. Gerstenberg, Chairman of the Board, General Motors Corporation

Clayton G. Hale, Chairman.

The Hale & Hale Company

Otto N. Miller, Chairman of the Board, Standard Oil Company of California

H. Bruce Palmer, Vice-Chairman, Council of Better Business Bureaus, Inc.

Ray T. Parfet, Jr., Chairman of the Board, The Upjohn Company

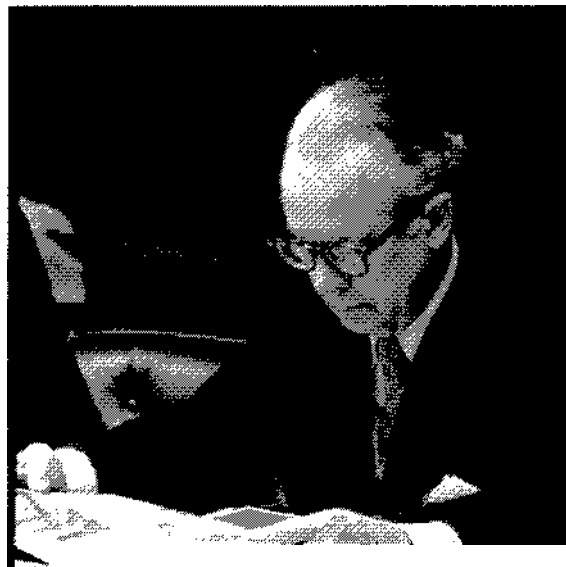
Raymond T. Perring, Chairman of the Board, The Detroit Trust Company

Ward L. Quaal, President, NBC Continental Broadcasting Company

William E. Schiller, Chairman of the Board, Hershey Foods Corporation

Walter E. Schirmer, Chairman of the Board, Clark Equipment Company

Lynn A. Townsend, Chairman of the Board, Chrysler Corporation



Above left, William E. Schiller, Chairman of the Board, Hershey Foods Corporation. Center, the Committee gathers around the large table in the Assembly Hall's Board Room. Left, Donald C. Cook, Chairman of the Board, American Electric Power Company, Inc.



Herbert L. Seegal, President of R. H. Macy & Company, was the guest of honor.

New Seegal-Macy Lecture Series in Marketing Established at School by Herbert L. Seegal

The newly established Seegal-Macy lecture series began this fall with a lecture by James W. Button, executive vice-president of Sears, Roebuck and Company, who delivered an illustrated lecture to a packed Assembly Hall audience on "Historical Marketing Strategies of Sears."

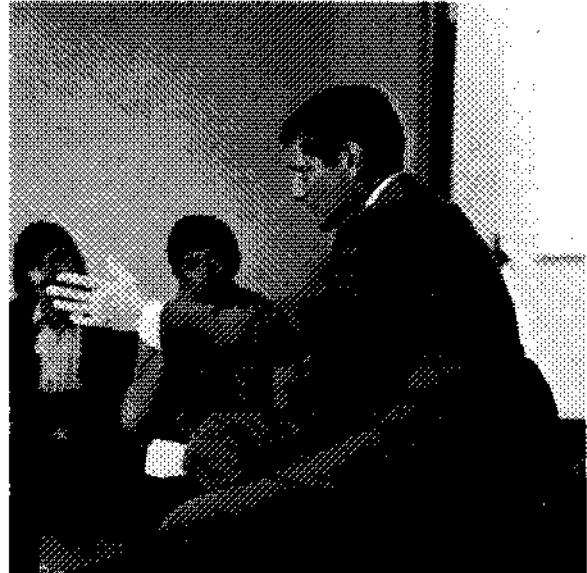
A gift from Herbert L. Seegal, President of R. H. Macy & Company, established the new lecture series in the field of marketing. The grant to our School was in honor of Rose Seegal and R. H. Macy. Mr. Seegal also established a lecture series at the Stanford Business School.

Mr. Seegal was present for the beginning of the lecture series, which was preceded by a luncheon in his honor in the Board Room of the

Assembly Hall. Present were Mr. Seegal, Warren H. Simmons, senior vice-president for corporate personnel of Macy's, Mr. Button, student members of the Dean's Committee on Excellence, members of the Seegal-Macy Committee, and the Executive Committee.

After lunch, students gathered for an informal discussion with the distinguished guests, and *Dividend* was there to take pictures.

Mr. Button is credited with some of the most successful of Sears' marketing innovations. Among his many honors is the 1971 AM A Marketing Man of the Year Award. Following his speech, he had dinner with members of the marketing faculty before returning to Chicago.



James W. Button, executive vice-president of Sears, Roebuck and Company, delivered the first Seegal-Macy lecture to a packed Assembly Hall audience. Here, he is pictured meeting with students before the lecture.

Below left,
University of
Michigan
Regent
Deane Baker.



Below, Dean Bond and C. F. Ogden,
executive vice-president of the
Detroit Edison Company. Left,
Oscar A. Lundin of General Motors.



Roger B. Smith, vice-
president and group
executive, General
Motors Corporation.

Business Committee Meets at Conference

More than 500 businessmen have gathered every fall for the past five years to attend the School's annual Business Conference at the Rackham Memorial Building in Detroit. During the afternoon and early evening, they listen to distinguished speakers discuss major issues facing the country, enjoy a reception, dinner and conversation among themselves. Every year also, much of the advance planning for the Business Conference is done by a special committee of distinguished businessmen. The pictures here are of some of the committee members and guests attending the conference. Above, Wilbur K. Pierpont, vice-president and chief financial officer of the University of Michigan, enjoys a joke with (left) Oscar A. Lundin, executive vice-president, finance, General Motors Corporation, and Dr. Robert V. Roosa, former under-secretary of the treasury for monetary affairs, who gave the dinner speech on "The Position of the Dollar in the International Monetary System." (Photos by Stuart G. Abbey)



Joseph G. Conway,
executive vice-president,
National Bank of
Detroit.

Can the "Real World" Be Taught?

Continued from page 2

integrity. Certainly a University is not the only repository of society's moral and ethical values. But it is one place where they should be both found and taught. The American enterprise system (or any other system) cannot survive without a generally understood and implemented set of values which prevail both in concept and "doing." An MBA graduate can take nothing more important into the marketplace than a clear understanding of, and a serious commitment to, a high sense of, and respect for, social ethics and standards.

What cannot be taught in the classroom? Can one be taught how to make profits for the company? There are several points to be explored here. First, there is a hoary problem in theoretical economics (with solutions not entirely satisfactory) as to the definition of "profit" and who is deserving of "profit." More complicating still is the effort one must make to understand financial statements that tell something about "profit" even when one thinks one knows what it is. If one is to be taught how to "make money," one must also be taught how success or failure are measured as represented by the financial statements. It is likely that a student can be taught quite readily that his revenues must exceed his expenditures if a business is to be viable, but such a simplistic approach won't endear one to the Senior Vice President of Finance for very long. Perhaps the most that can be done on this point is to have the MBA graduates grasp why it is that modern corporations require specialists in finance and accounting to cope with today's regulated and managed economy, the complexities of which manifest themselves in various ways that affect earning power, balance sheets, and operating statements.

It is also difficult to teach "profit-making" as a generalization that will be applicable to a specific, unknown,

and future situation. In the not-so-distant past it was widely regarded as adequate for a corporation to have as its creed "Maximize Profits." No longer is that creed and commitment unmodified in the modern corporation. Increasingly the commitment includes social attitudes that in effect modify the profit objective. It would indeed be a swashbuckling Chairman of the Board of a company on the *Fortune* 500 list who would publicly announce in today's world that, "My company's job under the American enterprise system is to make profit and let others take care of the social problems." At issue here are the subtle changes that are, in effect, redefining the American system of free enterprise.

Finally, can the MBA student be taught to manage? Probably not. On occasion a faculty will include a professor who has "met a payroll" and thereby, it may be felt in some quarters, has acquired proper credentials about how to manage. But precisely what is the content to be taught? Do we not find ourselves back to the discussion about experience in the earlier paragraphs of this article? This is not to say, of course, that management *subjects*

cannot be taught, because they can be and are. The teaching of Management as distinct from the teaching of How to Manage is of the same warp and woof as in the case of the practitioner vs. the academician.

So where does this leave us? Well off, for the MBA faculties earn their way in the world if they teach skills and functions, concepts and ideas, analysis, integration, and relationships, and if they inculcate the students with a lively and trenchant understanding and belief in the system's moral standards, values, and ethics. Why should we wish to do more?

About the author: D. O. Bowman was director of our Division of Management Education until last summer, when he resigned to become Dean of the School of Business Administration at California State University in Long Beach, Calif. He holds a Ph.D. in economics from the University of Michigan. He has much practical experience of the "real world," having served as vice-president, management systems and planning, of the Autonetics Division of the North American Rockwell Corporation. He was also director of long range planning at Crown Zellerbach Corporation in San Francisco from 1953 to 1960.

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Here

Dividend Magazine
The Graduate School of Business Administration
The University of Michigan
Ann Arbor, Michigan 48104

Letters

Editor:

We are particularly fortunate to have *Dividend* include a discussion by Paul McCracken of his views about the so-called "energy crisis." It is hard to dispute a person of such renown as an economic scholar and practitioner. Nevertheless, there are at least two assumptions or conclusions which Dr. McCracken rests his arguments upon that are very judgmental and possibly fallacious.

The currently vivid reaction by thousands of owner-truckers to the economic squeeze imposed upon them when gas prices are allowed to find their own level certainly indicates the inherent unfairness of simply allowing the price of scarce items to rise because the trucker

cannot "do what is also in the social interest," namely to use the relatively scarce item more sparingly. The many more small, local businessmen who rely upon metropolitan area trucking for their very survival has not yet been publicized in this area of high fuel prices. Obviously, Dr. McCracken had only the non-necessity users, the Sunday drivers and the single passenger commuter in mind.

The second serious issue, which is very lightly treated in my opinion, is the impact upon America's environmental concerns. If citizens were motivated (or forced) to do what is truly in the social interest and the "citizen's interest," the point where further improvement in our environmental rules is too costly "in terms of what must be given up in other directions" is almost out of sight. It would not seem unreasonable for economists to begin to

include in their equations the preservation of natural resources as weighing more heavily in any trade-offs that result in "rational decisions." Dr. McCracken's recommendation that government agencies should be reorganized so that the responsibility for both environmental matters and national energy policies be taken into account at the single point of decision making is to be strongly supported only if a new and stronger attitude toward environmental concerns protects the public from deluding itself and despoiling its landscapes and seas in the name of comfort and convenience.

Again, my thanks for publishing such an outstanding magazine of the Graduate School of Business Administration.

Dave Freeman, '52
Alexandria, Virginia

WE WANT TO HEAR FROM YOU!

Cut Along This Line. Address on Other Side.

Believing that a two-way flow of information between the School and its alumni is important and mutually beneficial, we are continuing to publish a post card on which we invite you to write us. This month we would be particularly interested in your comments on the "real world." Unless you indicate otherwise, we will feel free to publish your remarks in a letters column.