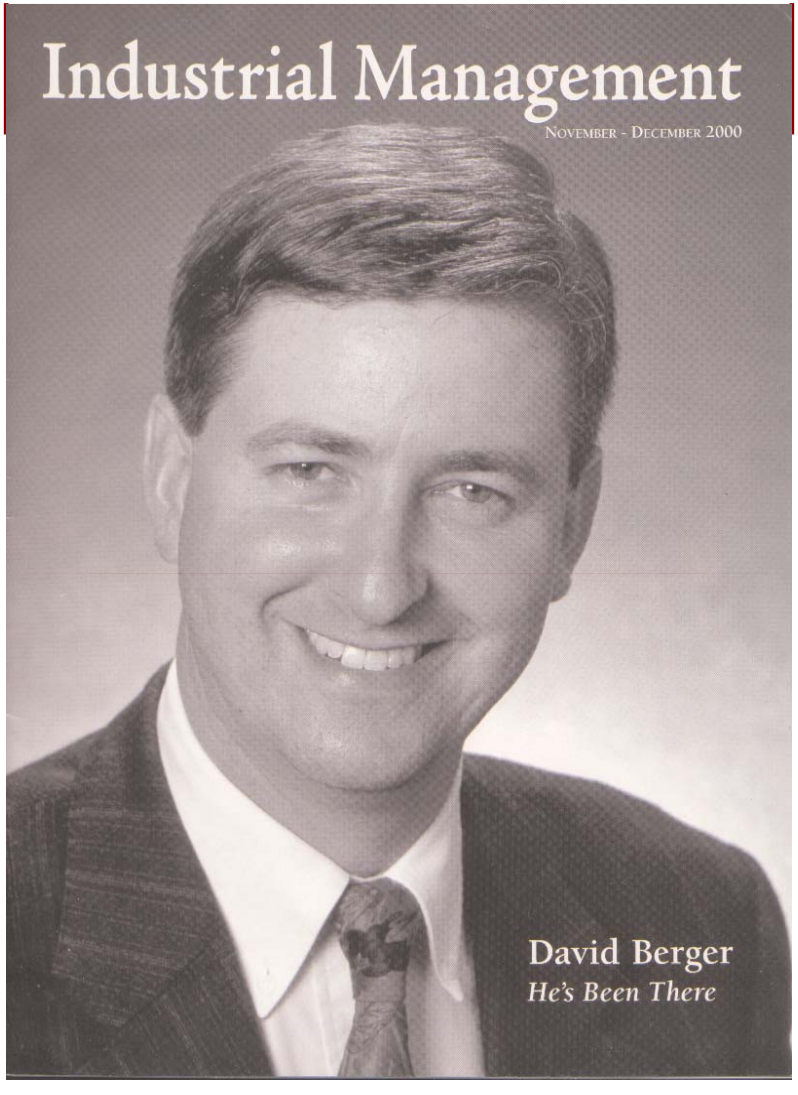

PUBLISHED REPRINT

Getting a Grip on Group Behavior
By Gary J. Salton, PhD.

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Executive Summary

Organizational Engineering allows managers to predict the behavior of groups – committees, teams, or co-workers – without the use of psychology. According to the author, the behavior of groups can be adjusted using sociological tools that adjust relationships – not people. The technology has been formally validated in applications involving more than 10,000 people ranging from Fortune 50 CEOs to unionized warehouse workers.

In the past, only psychology tools were available to help managers understand human behavior. But a new theory of human behavior that is founded on human information processing rather than psychology produces measurable results that can be plotted on graphs. The measurements can be added up and expressed in a way that accurately describes the behavior of groups. Groups themselves can be compared and the source of group-to-group discontinuities can be identified.

The discipline is called Organizational Engineering, and it offers managers the opportunity to explicitly consider human effects in its equations. The resulting product can reasonably be expected to increase the accuracy of measurements, improve the optimality of routings, and enhance the value of policy advice.

Human Information Processing

Humans are information processors, taking in information from the environment, doing something with it, and issuing a response. To a large degree, this process determines a person's behavior as well as that of the groups to which that person belongs. For example, a person who ignores detail and focuses only on the most central aspects of an issue will always be faster than a similarly skilled person who values detail because the detail-averse person has less to do. Similarly, a person who invests the time to understand a process is in a better position to explain it to others than is a person who simply focuses on completing the task. A high level of explaining skill is the result of the choice of an information processing strategy that places value on understanding before acting.

Even attitudes typically classified as psychological can be explained by human information processing - for example, a skeptical attitude. A heavy investment in gaining command over a process can make a person reluctant to accept new practices that render this hard-won knowledge obsolete. The skeptical attitude is entirely reasonable, explainable, and predictable, given the individual's knowledge. The person's information processing choice governs observable behavior.

Organizational Engineering analyzes behavioral tendencies by focusing on information flows. It teaches that information can be divided by two components: method and mode. Method concerns the organization of input information. An individual can adopt any position along a continuum spanning the spectrum of unpatterned to structured. Method governs the kind of information that is made available for processing. A person adopting an unpatterned posture tends to accept any information available that appears to be applicable to the issue at hand. This posture increases the speed of response, since usable information is likely to be found quickly. The cost of this posture is a higher variability of result since it is also likely that the information acquired may not exactly fit the issue at hand.

A person tending toward the structured end of the continuum takes more time to acquire information that is known to apply to the issue at hand. As a result, the person using a structured strategy earns a higher certainty of outcome but at a cost of speed of response. The person using an unpatterned method is seeking a satisfying, good enough outcome, while the person using a structured method is striving for an optimal outcome. Which is better? If you were in cardiac arrest, you might choose the "good enough" strategy to get your heart beating quickly. If you were running a nuclear reactor, the "optimal" approach would be better.

The mode frames the type of output being sought. It exists on the continuum that spans thought on one side, action on the other. As in the case of method, an individual must select a point somewhere on the continuum for every decision made.

Organizational Engineering defines thought as an intermediate level of response relative to a particular issue. An action response, on the other hand, decisively intervenes with the issue at hand in a way that directly affects that issue. For example, deciding to attend school and beginning to collect course catalogs is a thought-based response - a plan. On the other hand, sending in an application to a school is action that triggers a cascade: Files are opened in your name, bookstores are notified of your potential needs, professors are notified that one more person may be attending, and so on. The issue at hand, school attendance, has been directly and decisively affected. In both cases there is a decision, but one is an expression of intent and the other is an expression of commitment.

As is the case in method, an election on the mode continuum carries behavioral effects. People electing an action-based response get a clear confirmation of success or failure almost immediately. People electing a thought-based response have more latitude since the environment will not give a signal until the intermediate response is put into effect. In other words, a person whose preferences tend toward the thought end of the spectrum lives in a more ambiguous world than does a person whose preferences tend toward the action end of the spectrum.

The behaviors arising out of choices of method and mode are highly predictable and cover a wide range of observable conduct.

Organizational Engineering shows how the various combinations of method and mode can be bundled to produce strategic styles that can act as a tool in applying method and mode in the real world of organized human activity. Strategic styles are nothing more than combinations of method and mode that are reasonably stable in time and accurate in prediction. The four strategic styles created by the combination are outlined in Figure 1.

Reactive Simulator	A combination of unpatterned method and action mode. A focus on speed of execution, or "when," typifies this orientation.
Logical Processor	Combines structured methods and an action mode. An emphasis on "how" – exact sequences of activity needed to get a particular resut – characterizes this orientation.
Hypothetical Analyzer	Structured methods and a thought mode combine to reate this style. An emphasis on "why" – specific causal chains that connect event – is a major interest of this type.
Relational Innovator	Unpatterned methods and a thought mode unite to create a focus on the question of "what" – the scope and depth of the subject matter of the issue itself.

Figure 1. Strategic Styles

Organizational Engineering shows how the various levels of method and mode preference can be measured and how those measurements can be combined into points on the scale of each of the strategic styles. The method / mode scores of a hypothetical individual converted into strategic style are displayed in Figure 2.

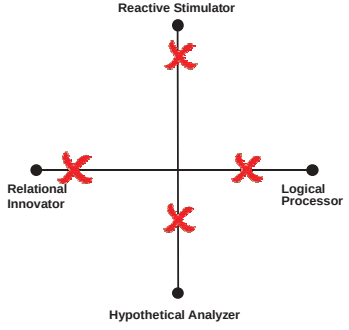

Figure 2. Strategic style measurement points

Predicting Individual Behaviors

Short-term behavioral tendencies can be read directly from the scorings on the individual strategic style axes. The strategic style with the highest score describes the likely short-term decision preference of a person; it is referred to as the primary style. In the case of Figure 2, this would be the reactive stimulator. This strategic style is a combination of an unpatterned method and action mode. It describes a person who would tend to favor expedient methods ("This looks like it might help") and an experimental mode ("Lets try it"). If you had to make a wager on the probable response of this type of person to the next issue that arises, this reaction would be your best bet.

Organizational Engineering also shows how the individual strategic styles can be connected to create estimates of longer-term behavioral patterns. Connecting the points on the scale creates a strategic profile (Figure 3). The surface area of each quadrant represents the probability that the individual will display behaviors that are common between the adjacent strategic styles.

The largest surface area is derived by combining a person's primary (most likely) and secondary (next most likely) behavioral elections. If the preferred primary style is not appropriate to a particular issue, a person is likely to revert to his or her secondary style. Thus, the primary and secondary styles are the behaviors an observer will repeatedly witness and that typify a person's behavior.

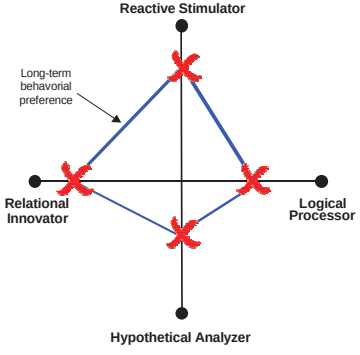

Figure 3. Strategic Style Profile

In the case of the Figure 3 profile, the common element in both the primary and secondary styles is an unpatterned method. In using this strategy, a person is likely to draw unique combinations of variables from the

environment since the only test is whether it looks like it might help. Every once in a while, totally unexpected combinations will occur. The idea-oriented relational innovator element (the secondary orientation) is ideally suited to weaving together a theory quickly about how to address the issue in question. The primary reactive stimulator component is strongly inclined to implement the theory immediately - even before it is thought-out or understood. The net effect is that a lot of ideas are quickly tested in the real world. The likely generalization an observer might draw from this behavior is that the person is frequently involved in changing things. Thus arises the designation changer that is applied to the quadrant (Figure 4).

Similar predictors can be easily drawn from each of the other quadrants displayed in Figure 4. The graphical strategic profile can be laid directly on top of the "snowflake" and the probable long- and short-term behaviors can be read directly from the graphic. Work-related characteristics - relating to goals, direction, supervision, and organization, among other things - can be inferred from the profiles generated by applying organizational engineering analysis to an individual. A formal validity study showed that 99 percent of people who have taken the instrument find the characterization generated by this analysis of their preferences to be accurate.

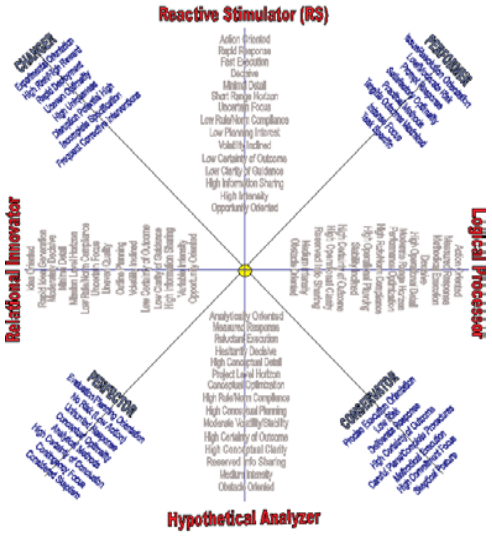

Figure 4. Strategic Profile "Snowflake"

Predicting Group Behaviors

The behavior of groups is not the simple averaging of the preferences of the people involved. Consider a person with a strong preference for certainty of outcome (say, a brain surgeon) paired with a person who has less certainty (a commodity trader). What would be your prediction for the common decisions of the pair? What if a third person were added who did not value outcomes at all but preferred to plan and asses, leaving the action to others? Would the two people follow our analytical person's advice? Most people would agree that merely pointing to personal references on the types of outcomes desired would not provide sufficient information to make any kind of reliable predictive judgement.

Organizational Engineering teaches that these and many other questions concerning the behavior of groups can be reliably estimated by focusing on the relationships of the information processing strategies used by individual group members.

First, we must focus on what we intend to predict. Predicting individual decisions with any great certainty is impossible. The world is chaotic, affected by more variables than can be counted: a team member might be preoccupied with her mother's illness; a co-worker can be so hungry he will agree to get to lunch; or someone's promotion might depend on the outcome on a particular decision. Trying to take these and a million other possible influences into account would be frustrating at best and silly at worst.

However, over time these unique influences tend to average out, and the character of group decision-making becomes visible. A group whose decisions are weighted toward rigorously looking for exactly the right information input (a structured method) and thoroughly examining all possible implications (a thought mode) will display a typical behavior. They will probably use a slow, methodical pace and will produce a relatively elaborate work product - a plan, evaluation, or assessment - rather than something that directly impacts the issue at hand. Any individual decision may contradict this prediction, but on average, this is the behavior likely to be witnessed by observers.

If any single decision cannot be predicted, then the best that can be hoped for is a probabilistic outcome. Organizational Engineering teaches that the probability will be given by the relative strengths of the different processing options used by team members and the interaction of the strategic styles involved.

Imagine a two-person team, one member committed to structured methods and thought-based output, the other committed to instant responses based on any information at hand that might resolve an issue. Knowing just this, we can reliably predict that this team will have great difficulty arriving at a common decision. If measurements of the specific information processing strategies being used are available, organizational engineering can accurately predict the outcome of joint decisions - they will be in the area were both people share a degree of common posture. But even on the basis of this limited information, Organizational Engineering can reliably predict that a common decision is likely to be difficult to reach and the outcome will not be entirely satisfactory to either party.

If no one in the group is paying attention to something (input), it is unlikely that the input being ignored will enter into the decision. For example, if everyone in the group is highly committed to structured methods, it is unlikely that totally original solutions to issues will be created. Why? Because totally original approaches typically involve putting together variables whose relationship was previously unrecognized. Paradigm-breaking discoveries require discarding existing structures in favor of new ones.

Similarly, the output (mode) side of the equation governs the kind of things that can be produced. For example, a group highly committed to thought-based responses such as planning, evaluation, assessment, and recommendation is unlikely to be seen as being highly responsive in resolving issues. Another group whose major focus is on action - immediately resolving issues - is unlikely to be seen as being reflective, comprehensive, or careful. Output predilections govern what is possible and this can be embedded in a predictive equation with great profit.

This demonstrates that even on a simple, descriptive level we can make useful predictions that can be used to guide our own expectations, plans, and behaviors. However, organizational engineering goes far beyond this useful, but somewhat simplistic, level of prediction. It accomplishes this by combining the strategic profiles of team members.

Figure 5 shows a two-person team of the character described in the previous example. The common area is very small, indicating the difficulty people will have in arriving at a commonly acceptable decision. In practice, common area can be expressed as the number of probable proposals that would have to be made before encountering one that is acceptable to both people.

Figure 5 also illustrates that groups are entities independent of its members. Person 1 is committed to performance and will use whatever means are at hand to resolve issues quickly. Person 1 places little value on new, creative ideas but will use them if they are readily at hand. Person 2 employs highly organized information and favors a thought-based output strategy. This person is highly committed to understanding and likes to know exactly how things work before doing anything. Neither Person 1 or 2 is particularly inclined to generate new ideas and apply them quickly. Yet notice that the largest common area is in the changer quadrant. In other words, while neither person is particularly inclined to be a changer, Their common decisions are likely to exhibit that characteristic. This phenomena is not only a graphical artifact, it can be seen in practice.

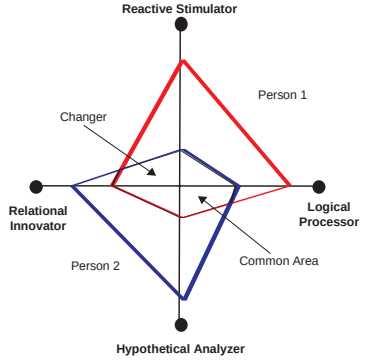

Figure 5. Strategic Style Profile

The same principles that apply to two-person teams apply to 20-person groups. The mathematics get more complicated as the many intercepting profiles create irregular patterns.

A key difference in assessing groups of more than two people is identifying the particular combination of strategic styles that drive group behaviors. In a two-person group, the determining influence is consensus - the area within which no one disagrees with a particular direction. However, it is very unusual to find actual decisions achieving consensus.

Organizational Engineering has found that, in practice, groups are driven by interaction of the majority of the group's members. This is true even when the actual decision-making is done using hierarchical methods. The reason is that it is difficult for anyone, even the nominal superior, to consistently stand up against a majority of people.

While majority typically controls, it can be difficult to discern exactly the direction of that majority. Finding exactly where seven of 12 people - a majority - occupy a position is almost impossible visually. As different points on the graph are considered, some people move into the majority, while others move out. Organizational engineering addresses the issue by mathematically analyzing every point on the graphic Using that information a simplified graph showing the consensus and majority areas can be constructed and exact measurements made of the area occupied in each of the four quadrants.

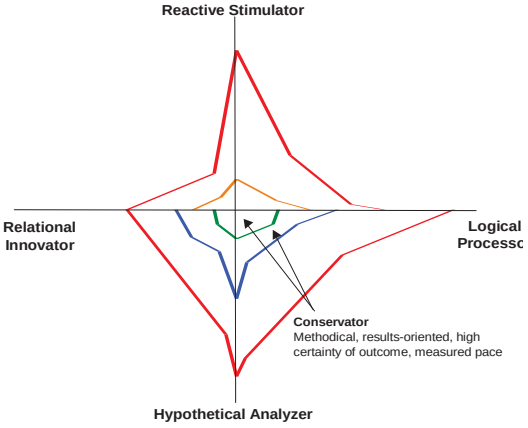

Figure 6 Strategic Style Profile of a 12-Person Group

The analysis of the 12-person group in Figure 6 shows that under both consensus and majority, the group overwhelmingly favors the conservator strategy. It would be a safe bet to predict that the group will be characterized by a risk-averse, methodical, carefully considered, and deliberately executed strategy. If a prediction centered on the next decision, the most probable outcome would be that the group would favor proven, well-understood methods applied without hesitation and methodically executed.

Leadership Effects

Organizational Engineering can also address the relationship of an individual to a group. In most cases this is applied to the analysis of group leadership. However, exactly the same technology can be applied to assess the fit of an IE to a particular group. This assessment is accomplished by overlaying the strategic profile of the individual with the composite profile of the group as a whole. Figure 7 illustrates how the conservator group described in Figure 6 might interact with an engineer who has a strong changer profile.

The same principles as applied in the two-person and group-level analyses are used in analyzing the relation of the individual to the group. The only difference is that in this case, the relevant measurements are made between the individual's profile and the majority rule area of the group profile.

In the case of Figure 7, The changer can expect considerable difficulty. The engineer will probably quickly generate many ideas on any issue and favor quick implementation on any experimental basis. In relating this posture to others, the engineer will tend to focus on the central points and be apt to omit the detail.

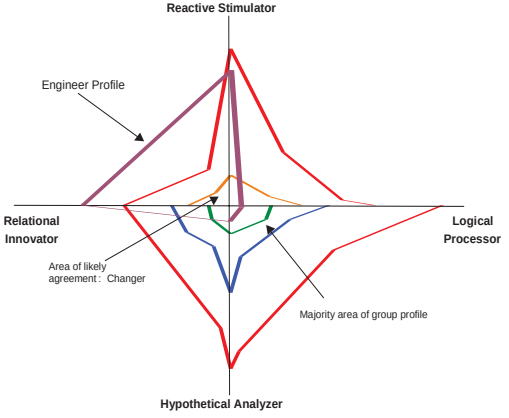

Figure 7 Individual Interaction with a 12-Person Group

The group being guide is unlikely to welcome the engineer's approach since the favor analysis as a means of examining an issue and require great detail before they are comfortable with an approach. In addition, their orientation is likely to be skeptical; the engineer can expect to find much resistance to any proposal involving totally new approaches to common issues. The area of overlap between the engineer's profile and that of the majority of the group is small. If the engineer persists, it is likely that an acceptable accommodation will eventually emerge.

It is interesting to note that the area of the likely agreement will probably fall in the direction preferred by the engineer. The largest overlap between the engineer and the group is in the changer quadrant. It will not

be easy to discover, however. If this information were available at the beginning, the engineer would realize that the process being embarked upon would not be cheap in terms of time or energy; therefore, plans could be laid out accordingly. In addition, the engineer would know that the group would eventually accept the change-oriented proposals, but perhaps not at a level considered ideal by anyone involved.

Changing Group Behavior

Prediction is the first step in controlling group behavior. Prediction discloses the issues that have to be addressed in a particular group. If a group is already inclined to generate ideas and take action on new initiatives quickly, it is unnecessary to consider installing mechanisms that will incline them in that direction. If a group is already disposed to analyze issues thoroughly, it is wasteful to install machinery to generate that behavior. On the other hand, investing in initiatives to promote careful planning and analysis could pay high dividends if the group were inclined to avoid the discipline involved in that activity. The ability to predict group tendencies enables the use of tools that cause the group to behave in the desired manner.

Another point to be made in the control of groups is that is usually both expensive and useless to try to change people. Most people discover early in a marriage that they are unable to change their mates in a direction more to their liking. Rather, they reach an accommodation under which the less-than-ideal behavior can be tolerated. If people are unable to change those with whom they share the most intimate association, why would they believe they can change co-workers with whom they have only a limited and transient association?

Fortunately, individuals do not have to be changed to change the direction of a group. By definition, a group is a system of associations. If the nature of associations is changed, the behavior of the group has no choice but to follow the directions dictated by those connections.

Notice that no individual in the group has to change to elicit the new behavior. The group has been redirected simply by changing the relationships among the existing members. Changes in relationships are easier, faster, cheaper, and produce more certain results than attempts to change people. A sample of relationship-adjusting tools include:

- Rules
- Roles
- Goals
- Organizational form
- Decision-making options
- Group size
- Facilities
- Hierarchy
- Leadership

To control the direction of groups, the organizational engineer must know which tool to apply, when to apply it, and what effect the application will have on the group.

Rules typically work best with people and groups who are comfortable using structured methods. Trying to apply rules to people subscribing to unpatterned methods, however, usually yields uneven results.

A real-life example is the difficulty of controlling a sales team with rules. Many sales people have a high reactive stimulator (i.e., unpatterned method, action mode) component in their strategic profile and are known for their tendency to skirt the rules. They see the result vividly, know how to make it happen, and recognize opportunities that might not be visible to those using structured means. This combination of tendencies is not a formula for rule-compliant behavior. Organizational Engineering would recognize this condition and advise against attempting to guide this group with rules, favoring the use of roles. Roles are assignments of authority and accountability for some end.

They define what is desired, but the person who assumes the role decides how to achieve that end. Rules define how something is to be done while roles define what is to be done. A salesperson might be given a role of securing orders that are backed by 100 percent certainty of payment. How the orders are secured and how the payment is assured is left to the discretion of the salesperson. Using roles as a tool, the unpatterned method and action mode are leveraged rather than constrained.

All of the tools in the organizational engineering toolkit carry similar advantages and limits. Organizational Engineering offers a wide variety of methods to direct group behavior. None of the tools requires any individual to change, only relationships. The necessary ingredient is that the designer knows how to combine groups of people to achieve a particular result. Organizational engineering provides this knowledge in a proven and actionable form.

The Author

Gary J. Salton, Ph.D., is the developer of the Organizational Engineering theory and the author of *The Manager's Guide to Organizational Engineering.* Salton is chief of research and development and CEO of Professional Communications in Ann Arbor, Mich. He holds a doctoral degree in sociology, a master's in economics, and an M.B.A. He has worked at senior executive levels in automotive, real estate, and investment banking.