

Organisational Change: Strategy and Complexity

GEOFFREY MACKECHNIE

Précis: Research on organisational change has rarely treated the nature of the change as a variable. This can be done by differentiating changes in terms of complexity. By treating both change complexity and change strategy as variables a more elaborate model of the change process can be established, forming a link between the study of change and other branches of organisation theory.

A considerable volume of literature has been produced on planned change in organisations. The theoretical constructs and methodology are predominantly derived from social psychology; thus research data are largely concerned with the attitudes, perceptions and levels of trust displayed by those organisational members whose conformity with the changes is hoped for. The achievement of change is principally conceived of as a process of inducing reorientation and acceptance by the "clients", a psychological process that is referred to in terms such as "unfreezing".

Following this approach, researchers tend to adopt the perspective of the leadership or controlling group of the organisation. Success is defined as achieving desired modifications to the operating system, including changed behaviour by the lower level members.

Early studies were unambiguously directed towards "overcoming resistance to change" (Coch and French 1948). Later, the emphasis shifted towards the planning of change, and in particular how behavioural scientists could facilitate the change process by acting as consultants or change agents (Bennis, Benne and Chin, 1961; Lippit, Watson and Westley, 1958).

The strategies proposed and tested are based on education (particularly behavioural learning in T-Groups), and participation in the change programme by all who are likely to be affected. The idea which these theorists are

3. *Degree to which radical*: a change may be far-reaching in its ultimate effects rather than evoking only limited consequences. The prospect of extensive consequential events does not in itself give rise to uncertainty or controversy, since these are more accurately categorised as separate dimensions which are dealt with below. A change which merely is radical has extensive though predictable consequences. The most pressing problems are likely to be anxiety and suspicion among those whose conformity with the change is required unless the full implications are made clear.

Proposition: the change strategy will need to incorporate an adequate degree of detailed forecasting.

4. *Degree of equivocality*: a change may introduce the prospect of ambiguous and unclear consequences rather than predictable, straightforward consequences. Where future contingencies are to be expected, even if these are not very important or far-reaching, an element of risk exists for all concerned. Change strategy will therefore be susceptible to two difficulties: first, vacillation by those initiating the change; and second, suspicion by the others affected that unexpected consequences will be turned to their disadvantage by those in control of events.

Proposition: the change strategy will demand self-confidence and cohesion among the initiators and trust on the part of the passive performers.

5. *Degree of required re-orientation*: A change may involve a considerable re-appraisal of basic working assumptions rather than requiring virtually no variation of current assumptions. Any operating system rests on certain expectations and rule-of-thumb principles established through experience and experiment. These may well be called into question by a change in the patterns of activity, and require a re-examination of precepts that are normally taken for granted. Certain details of the change will therefore require intelligent analysis and imaginative problem solving.

Proposition: the change strategy will need to create conditions facilitating analytical rigour and shared beliefs and values among those directly involved.

6. *Degree of novelty*: a change can be considered novel to the degree that it proposes activities outside the organisation's previous repertoire. Although the novel activities may not be equivocal or require re-orientation, an element of inventiveness will invariably be re-

Organisational Change: Strategy and Complexity

GEOFFREY MACKECHNIE

Précis: Research on organisational change has rarely treated the nature of the change as a variable. This can be done by differentiating changes in terms of complexity. By treating both change complexity and change strategy as variables a more elaborate model of the change process can be established, forming a link between the study of change and other branches of organisation theory.

A considerable volume of literature has been produced on planned change in organisations. The theoretical constructs and methodology are predominantly derived from social psychology; thus research data are largely concerned with the attitudes, perceptions and levels of trust displayed by those organisational members whose conformity with the changes is hoped for. The achievement of change is principally conceived of as a process of inducing reorientation and acceptance by the "clients", a psychological process that is referred to in terms such as "unfreezing".

Following this approach, researchers tend to adopt the perspective of the leadership or controlling group of the organisation. Success is defined as achieving desired modifications to the operating system, including changed behaviour by the lower level members.

Early studies were unambiguously directed towards "overcoming resistance to change" (Coch and French 1948). Later, the emphasis shifted towards the planning of change, and in particular how behavioural scientists could facilitate the change process by acting as consultants or change agents (Bennis, Benne and Chin, 1961; Lippit, Watson and Westley, 1958).

The strategies proposed and tested are based on education (particularly behavioural learning in T-Groups), and participation in the change programme by all who are likely to be affected. The idea which these theorists are

anxious to establish is that a high level of personal involvement leads to a willingness to conform.

However, research findings did not provide consistent evidence that recommended change strategies were particularly successful. Jones (1969 p.115) noted that strategies and tactics of change "have been one of the primary occupations of scholars of change but little of concrete substance has been forthcoming". In his own elaborate study no strong relationship was found between goal achievement and the strategy used. He concluded that the application of strategies appeared to be more of an art than a science.

This lack of progress has inhibited further academic research in recent years, and some of the most enthusiastic 'scholars of change' have become somewhat disillusioned (see, for example, Bennis, 1970). The disappointing research results suggest a need to look again at the theoretical framework within which research has taken place.

One notable feature is that the nature of the change being introduced is rarely treated as a variable. Attention is for the most part confined to the strategies used by the change agents and to the behaviour, attitudes and satisfaction of the reactors. The change itself is normally a major one having a significant impact on those involved. However, systematic attention is not given to considering whether this impact will vary with detailed differences in the nature of the change being introduced.

This neglect can be traced to the intellectual background of students of organisational change. The focus of interest is on psychological phenomena: the effect of the quality of inter-personal relationships on the propensity of individuals and groups to accept influence from others; and in particular seeking to establish the virtues and practicality of supportive, considerate interpersonal relationships within organisations. Common experience would suggest, however, that not all changes are equally welcome. Moreover, some changes may be considered quite straightforward and simple by those whose conformity is hoped for, while other changes may prove complicated and difficult to understand. This can be stated more formally: the ease of acceptance of a change will be influenced by the degree of incongruence with pre-existing values and cognitions.

If this is so, it would be useful to assess a given organisational change on a scale of complexity: where incongruence is extreme the change can be considered complex, and where there is little significant incongruence the change can be assessed as simple. Complexity becomes an intervening variable affecting the relationship between the change strategy employed and the degree of success with which the change is implemented.

This variable was considered during a recent study of labour relations policy making (MacKechnie, 1974). The data comprised a variety of change attempts made by the managements of six industrial companies seeking to modify their production system. These were traced in some detail and analysed in terms of "change complexity". Eight separate dimensions of complexity were identified, each of which constituted a potential source of difficulty in the translation of a proposed change into an actual modification of organisational activities. A change which was not characterised by a significant degree of complexity on any of these dimensions could therefore be defined as a simple change. On the other hand, a change characterised by a high degree of complexity on all eight dimensions would fall into the highly complex category.

Dimensions of Complexity

The dimensions of complexity identified during the research can be outlined briefly. In each case the effect of the "complexity characteristic" on change strategy is suggested in the form of a proposition.

1. *Degree of dispersal*: a change may affect several or all parts of the operating system rather than a single administrative unit exclusively. A "dispersed" change will therefore require collaboration between managers from different departments at its inception. Successful implementation will depend, at a minimum, upon an effective system of information transmission to diverse groups. This may well require an extension to the pattern of communications based on normal operating requirements.

Proposition: Where dispersal is present, the change strategy should be designed to cope with needs for additional interpersonal contact and an elaboration of established communication channels.

2. *Degree of specialisation*: a change may introduce activities of some complexity which cannot be understood easily by those not possessing the relevant specialised knowledge. A "specialised" change will call for careful guidance and explanation by the specialists. It will probably be necessary for the new system to be broken down into relatively simple elements in order that non-specialists can understand their own new task requirements. This means that non-specialists will need to take the overall logic of the changes on trust to some degree.

Proposition: the change strategy will need to accommodate problems of trust as well as mutual comprehension.

3. *Degree to which radical*: a change may be far-reaching in its ultimate effects rather than evoking only limited consequences. The prospect of extensive consequential events does not in itself give rise to uncertainty or controversy, since these are more accurately categorised as separate dimensions which are dealt with below. A change which merely is radical has extensive though predictable consequences. The most pressing problems are likely to be anxiety and suspicion among those whose conformity with the change is required unless the full implications are made clear.

Proposition: the change strategy will need to incorporate an adequate degree of detailed forecasting.

4. *Degree of equivocality*: a change may introduce the prospect of ambiguous and unclear consequences rather than predictable, straightforward consequences. Where future contingencies are to be expected, even if these are not very important or far-reaching, an element of risk exists for all concerned. Change strategy will therefore be susceptible to two difficulties: first, vacillation by those initiating the change; and second, suspicion by the others affected that unexpected consequences will be turned to their disadvantage by those in control of events.

Proposition: the change strategy will demand self-confidence and cohesion among the initiators and trust on the part of the passive performers.

5. *Degree of required re-orientation*: A change may involve a considerable re-appraisal of basic working assumptions rather than requiring virtually no variation of current assumptions. Any operating system rests on certain expectations and rule-of-thumb principles established through experience and experiment. These may well be called into question by a change in the patterns of activity, and require a re-examination of precepts that are normally taken for granted. Certain details of the change will therefore require intelligent analysis and imaginative problem solving.

Proposition: the change strategy will need to create conditions facilitating analytical rigour and shared beliefs and values among those directly involved.

6. *Degree of novelty*: a change can be considered novel to the degree that it proposes activities outside the organisation's previous repertoire. Although the novel activities may not be equivocal or require re-orientation, an element of inventiveness will invariably be re-

quired from the initiators. From those whose compliance is necessary the major requirement is a willingness and ability to learn. The learning may not be particularly demanding (this would depend largely on the degree to which the change were specialised) but would be inhibited by emotional attachment to familiar working arrangements.

Proposition: the change strategy must encourage the free acceptance of ideas.

7. *Degree of divisiveness:* A change may evoke differences of interest and values among those concerned. Divisiveness will be high where the proposed course of action seriously contravenes the felt interests and values of a large proportion of those involved. Acceptance of the change will require a degree of submission by some or all of those involved. This may take the form of compromise, where the divided parties all modify their position, or through domination, where the views of one faction prevail. Compromise is facilitated by a general willingness to understand and respect the views of others, while domination is only feasible where there is a concentration of power or authority in one faction.

Proposition: the change strategy must make provision for withdrawal, by some or all concerned, from previously stated positions.

8. *Degree of forcefulness:* A change may be of compelling importance for some or all of those involved. This will normally reflect strongly held values, either in support of, or in resistance to, the change. Various permutations are possible: forcefulness may be unified, where all those involved share a common concern; it may be factional, where some are highly concerned and others indifferent; or it may be polarised (in a change that is also divisive) where strong support and strong resistance are manifested by different factions. Where there is high forcefulness of any of these three types a low tolerance of hesitation, compromise and delay can be expected.

Proposition: the change strategy must recognise the need for a re-ordering of existing priorities by some or all of those involved.

Each of these dimensions may be considered as a source of complexity which may or may not characterise any given organisational change. The propositions above suggest that the presence of each characteristic has a influence on the nature of the change strategy most likely to prove successful in implementing the change.

A particular change may possess few or several of these characteristics and may possess any characteristic to a high or low degree. An extremely simple

change may possess no characteristics of complexity to a significant degree; conversely an extremely complex change may possess a high degree of all eight characteristics.

Since each characteristic is posited to set up rather different demands on the change strategy, difficulties are likely in the case of complex changes. The initiators of the change can be expected to try to devise a strategy which meets the problems of each characteristic of complexity.

It may well be, however, that no single strategy meets the diversity of problems; in fact it could be that a solution to one problem exacerbates another problem. If this should be so, then the determination of a strategy will require an element of compromise between competing considerations, with advantages in relation to one problem being traded off against compensating advantages elsewhere. To pursue this further it is necessary to consider the nature of the alternative strategies that can be adopted.

Typology of Strategies

The literature offers no generally agreed typology of change strategies. Several theorists (e.g., Jones 1969) use Etzioni's all-inclusive classification of compliance in organisations into three basic categories: coercive, normative, or utilitarian (Etzioni 1961). A coercive strategy seeks to secure compliance by the application, or the threat of application, of physical force; a normative strategy relies upon the internalisation of directions accepted as proper and legitimate; a utilitarian strategy seeks compliance by control over material resources and rewards. Etzioni suggests that normative compliance is the most effective, providing that the necessary legitimate authority can be achieved. Coercive and utilitarian compliance is normally no more than somewhat reluctant acquiescence which will be limited in its effect.

An alternative typology can be derived from March & Simon's (1958) distinctions between the processes by which organisations may react to conflict. They make a major division between *analytic* processes, which comprise persuasion and participative problem solving, and *bargaining* processes, which are taken to include informal "political" manoeuvring. These can be added to straightforward direction or "command" (in cases where conflict does not arise) to give four alternative strategies: command, persuasion, participation and bargaining.

This categorisation differs from Etzioni's in that it defines change strategy in terms of the behaviour of the parties, rather than the basis on which acquiescence is sought.

Persuasion and participation would appear most likely to involve normative or utilitarian compliance; bargaining normally implies an accommodation between parties resting on utilitarian considerations; command,

however, being a unilateral influence attempt, would be successful in any case where there was a sufficient concentration of power or authority (whether coercive, normative or utilitarian in nature) so long as this permitted domination by the initiator of the change.

For greater precision it might be reasonable to combine both typologies to give a rather wider range of possible strategies. Thus within the general command approach, one of three distinct strategies might be chosen, i.e., coercive-command, utilitarian-command or normative-command. If, for completeness, it is assumed that each of the four behavioural types could be combined with any of the three bases of influence, twelve distinct change strategies can be identified:

| | Command | Persuasion | Participation | Bargaining |
|-------------|---------|------------|---------------|------------|
| Coercive | 1 | 4 | 7 | 10 |
| Utilitarian | 2 | 5 | 8 | 11 |
| Normative | 3 | 6 | 9 | 12 |

Clearly some of these strategies are difficult to visualise: for example, strategy 7 (coercive-participation) is hardly a practical proposition at first sight, and is unlikely to be found in practice. Others can be expected to be more common: for example, strategy 3 approximates to charismatic leadership; strategy 11 forms the basis of collective bargaining; strategy 2 represents the familiar style of industrial management, while strategy 9 is perhaps closest to the more recent attempts to secure involvement from subordinates by participative management. A rather different approach to workplace relationships, productivity bargaining, would be more accurately classified as strategy 8.

Whether or not these are in fact the most common change strategies, and whether some of the others are not feasible in practice are questions that cannot be answered *a priori* but should be left to empirical investigation. Even the coercive-command strategy ("making an offer you can't refuse" in the language of the Godfather) might prove to be more common than one would like to suppose.

Empirical Study of Complexity and Strategy Variables

It is hypothesised that the choice of strategy by those introducing change will be related to the nature of the complexity of the change. To test this empirically it would be necessary to dissect a number of change situations in some detail.

The first step would be to make an assessment of the strategy used by the initiators. Their choice between the twelve possible strategies would be ascertained by observing the relationships they seek with those whose conformity they are seeking. They may act unilaterally (strategy 1, 2 or 3); endeavour to win consent for their proposals (strategy 4, 5 or 6); solicit problem-solving suggestions (strategy 7, 8, or 9); or seek terms on which their proposals would be complied with (strategy 10, 11 or 12). The manner in which the changes were presented would indicate whether coercive, normative or utilitarian compliance was expected, thus establishing which of the twelve strategies was being employed.

In the case of a change of any substance, the analysis would need to be continued throughout the process, since it is likely that shifts in strategy would take place in response to various difficulties and issues that emerged.

At the same time, an assessment would be made of the initiators' perceptions of the complexity of the change. At the outset they might, for example, regard the change as being predominantly characterised by a high degree of dispersal, equivocality and novelty. As the change progressed, they might come to appreciate that it was also significantly specialised and divisive.

The initial change strategy would be based on the assumed complexity of the change. Shifts in strategy could be expected only when the initiators diagnosed an unexpected characteristic of complexity. The relationship between change strategy and change complexity that would emerge from empirical study would in fact be a reflection of the interpretation, by the change-initiators in any particular case, of the nature of the problems being faced and also the means by which they might be overcome.

It could not be expected, therefore, that a particular form of perceived complexity will invariably evoke the same strategy from different initiators. For example, if a change were to be considered to be specialised, bringing the likelihood that conformity would be inhibited by lack of understanding, one initiator might consider that a normative-participation strategy to be appropriate, allowing free discussion and low-tension. Another initiator, however, might believe that a utilitarian-command strategy would be more effective, setting up a clear unambiguous course of instruction linked to attractive rewards.

However, it is reasonable to expect that certain patterns would recur generally. Command strategies are the least time-consuming and would seem likely to be chosen whenever the change was thought to be simple. If complexity of a cognitive type were expected, specifically on the specialised, radical, novel and reorientation dimensions, rather more elaborate explanation and persuasion would be a natural result. Participative strategies would become more probable where high levels of trust were deemed necessary, particularly when the change was known to be equivocal. Divisiveness

and forcefulness could be expected to create a tendency towards bargaining if powerful resistance were anticipated.

It could be hoped that empirical research would reveal a consistent relationship between certain strategies and certain types of change complexity. This would establish a foundation of logical precepts governing the implementation of organisational change.

Leaning on these basic precepts, it would be possible to make an appraisal of inconsistencies and anomalies in individual cases, reflecting trade-offs between advantages accruing from alternative potential strategies, idiosyncratic beliefs and values among change-initiators, and practical difficulties in switching from one strategy to another as unexpected complexities emerged.

A number of difficulties can be anticipated, both in gathering data and in categorising it with sufficient precision. Nevertheless, the juxtaposition of a typology of change strategies with a typology of variations in the nature of specific changes should lead to theoretical progress. In particular, by giving recognition to differences in the nature of changes, a better synthesis could be achieved between the alternative types of strategy proposed in the literature.

Uses of the Strategy/Complexity Model

The linkage of change strategy with change complexity into a unified analytical framework, as proposed in this paper, produces a somewhat elaborate model of the change process. The proliferation of variables presents considerable difficulties of measurement and interpretation. Against this, however, can be set the advantage of placing the process of organisational change on a broader base. The study of change strategy can be integrated with other aspects of organisation theory, since the dynamics of organisational functioning is in effect a summation of changes of various sorts. Assumptions on the nature of the change process, whether implicit or explicit, are inherent in all models of organisations. The strategy/complexity analysis of change can be applied to alternative theoretical approaches to organisations and used to clarify the differences between them.

Thus the principles of management expounded by classical management theory—unity of command, limited spans of control and so forth—suggest a preponderance of what we have called command strategies. The emphasis placed on leadership qualities at senior levels and loyalty at lower levels indicates a preference for normative-command strategies though utilitarian-commands are frequently recommended as a reserve. It can be noted that the two strategies are by no means mutually exclusive — F.W. Taylor's scientific management relied upon command strategies based upon an explicit moral precept, the creation of wealth through rational effort. His bonus scheme was essentially a means of distributing the value created, though Taylor also

recognised the usefulness of these utilitarian rewards in facilitating compliance. His functional foremen could therefore be said to be using a combined normative/utilitarian command strategy.

Weber's bureaucratic ideal type, though resembling the classical model in many respects, recognised the limits of hierarchial domination. The political tensions between bureaucratic officials and the controlling group implies a utilitarian-bargaining strategy by each, within the normative framework of rational/legal legitimacy.

Many managerial theorists also recognised important influence processes within the organisation co-existing with the command structure. For example, Mary Parker Follett's notion of "dynamic integration" could be classified as comprising normative-participation strategies.

The early post-Hawthorne human relations writers focused their attention on poor mutual understanding between management and workers. Their recommendations fell, for the most part, into the normative-persuasion category. The disappointing results of training managers in the necessary social skills led to a shift towards normative-participation strategies (e.g. McGregor 1960). At the same time, an alternative formulation, based on a rather different intellectual tradition, represented organisations as coalitions of distinct interest groups, implying greater emphasis on utilitarian-bargaining strategies (Cyert and March 1963, Thompson 1967).

The recent "contingency models" of organisations, pursuing the premise that systems of management tend to vary in different operating circumstances, suggest hypotheses relating the strategies implicit in various structural forms to the complexity of change typical of specific operating conditions. Thus the mechanistic system of management (Burns and Stalker 1961), which corresponds to the recommendations of classical management theory, is posited as being appropriate to stable technical and market environments. Since stability is consistent with changes of low complexity, the command strategies implicit in mechanistic structures can be hypothesised as being appropriate to these changes.

Burns and Stalker contrasted the mechanistic system of management with the "organic", appropriate to unstable environments presenting frequent high-complexity changes. The organic system appears to rely on normative-persuasion and normative-participation strategies, so these can be hypothesised as being appropriate to complex changes.

Operating Contingencies as Changes

The patterns of interaction that comprise the structure of an organisation are a network of information exchange and decision making and, at the same time, a system of government. Events occurring in the environment present the organisation with contingencies that need to be coped with. Appropriate responses are then devised in the sub-unit most closely concerned in

any particular case, perhaps the sales department or the production control department. If these responses require supporting action in other parts of the organisation, these requirements must be transmitted through interactions which are simultaneously an information exchange and an influence attempt. Each occasion on which members in one part of the organisation initiate action for other members can be considered a change attempt, creating potential difficulties of comprehension and acceptance.

There are, of course, innumerable initiatives of an unexciting kind occurring regularly as part of the day-to-day functioning of any organisation. It is only conspicuous changes, with a high degree of complexity, that come under study as examples of organisational change. Almost invariably, however, the major change is not studied in the context of the pattern of recurrent initiatives which comprise the normal dynamics of the organisation in question.

The strategy/complexity model avoids this shortcoming. Minor changes fit into the analysis as easily as major changes. Major changes therefore can be studied with more precision as variations on the *status quo*.

Quite apart from facilitating the study of major change attempts, the analysis of the routine functioning of any organisation in terms of change attempts, by the application of the strategy/complexity model, should prove useful to the development of contingency theories of organisation structure. As we have argued earlier (following Thompson, 1967), the environment impacts on an organisation in the form of a stream of contingencies. The administrative structure constitutes a set of interpersonal relationships designed to cope with the consequential changes.

The strategy/complexity model provides a means of analysing the linkage between environment and structure more precisely. The exact degree of change has frequently been suggested as a variable which explains significant differences between alternative formulations of flexible structures. Thus the Burns and Stalker (1961) organic system has been differentiated from the Lawrence and Lorsch (1967) findings in the plastics industry by Normann (1971), and differentiated from Likert's (1961) "enhancement model" by Smith, Moscow, Berger and Cooper (1969). In both these cases the variations in the degree of change could have been more accurately expressed in terms of complexity characteristics, and the structural implications set out more precisely in terms of institutionalised change strategies.

The strategy/complexity model can therefore be used to bridge a gap between two important branches of organisation theory. It enables the structural models of contingency theory to be expressed in terms of organisational change, and theories of planned change to be expressed in terms of structural variation.

Trinity College, Dublin.

REFERENCES

- BENNIS, W. G., 1970, "A funny thing happened on the way to the future", in Thomas and Bennis (eds), *Management of Change and Conflict*, Harmondsworth: Penguin 1972.
- BENNIS, W. G., K. D. BENNE, and R. CHIN, 1961, *The Planning of Change*, New York: Holt Rinehart and Winston.
- BURNS, T., and G. M. STALKER, 1961, *The Management of Innovation*, London: Tavistock.
- COCH, L., and J. FRENCH, 1948, "Overcoming resistance to change", *Human Relations*, Vol. 1.
- CYERT, R., and J. A. MARCH, 1963, *A Behavioural Theory of the Firm*, Englewood Cliffs: Prentice Hall.
- ETZIONI, A., 1961, *A Comparative Analysis of Complex Organisations*, New York: Free Press of Glencoe.
- JONES, G. B., 1969, "Planned Organisational Change", London: Routledge and Kegan Paul.
- LAWRENCE, P. R., and J. LORSCH, 1967, "Organisation and Environment" Cambridge Mass Harvard.
- LIPPITT, R., J. WESTON, and B. WESTLEY, 1958, *The Dynamics of Planned Change*, New York, Harcourt Brace.
- LIKERT, R., 1961, *New Patterns of Management*, New York: McGraw-Hill.
- McGREGOR, D., 1960, *The Human Side of Enteroruse*, New York' McGraw-Hill.
- MacKECHNIE, G., 1974, *Labour Relations Policies within the Firm*, Dublin: Irish Productivity Centre.
- MARCH, J. A., and H. A. SIMON, 1958, *Organisations*, New York: Wiley.
- NORMANN, R., 1971, "Organisational innovativeness", *Administrative Science Quarterly*, Vol. 16.
- SMITH, P. B., D. MOSCOW, M. BERGER, and C. COOPER, 1969, "Relationships between managers and their work associates", *Administrative Science Quarterly*, Vol. 14, No. 3.
- THOMPSON, J. D., 1967, *Organisations in Action*, New York: McGraw-Hill.