Magic in Business and Industry : notes towards its recognition and understanding

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RÉSUMÉ

Dans cet article, on nous présente une définition de la magie qui, contrairement à la notion reçue, exclu l'idée du surnaturel. Une telle définition nous permet d'identifier l'aspect magique des comportements industriels et de les comparer avec certaines activités irrationelles des peuples primitifs.

INTRODUCTION

In business and industry there is a need for the understanding of apparently irrational behaviour.[1] For a hundred years anthropologists studying non-Western peoples have been able to describe some apparently irrational behaviour in terms of its function in the wider cultural context. They also had a name for it: magic, which was defined by Frazer (1911) as pseudo science.

Irrational behaviour in industry has largely been described in negative terms. Change agents who seek to alter patterns in the social or individual behaviour have referred to the resistance to change (a negative term). It has been stressed that change agents such as technicians working in developing countries must understand the societies which they are seeking to change in order to get some point of leverage to start a process of change (Goodenough 1963). It has been emphasized that in a different society different values prevail which from a Western point of view indicate an ignorance of many things known to science. Frequently the non-adaptive behaviour in developing non-Western countries can be related to — in Western eyes — a prevailing system of religion and/or magic. Once having given it a name, anthropologists can

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[1] Paper read at the annual meetings of the Canadian Sociology and Anthropology Association, Sherbrooke, 1966.

metaphorically demonstrate its existence and argue for its proper study within the society within which it occurs.

But in industry non-adaptive behaviour is not glorified by any term more arresting or romantic than "resistance to change" which is a negative term and a rather unexciting one at that. In order, therefore, to call the same things by the same name, and in order to focus on the cross cultural study of comparative phenomena, I am proposing to label a substantial portion of apparently irrational business and industrial behaviour as magical.

SOME EARLY CONCEPTS OF MAGIC

Tylor (1871), while he offers no crisp definition of magic leaves us in no doubt what he means by it. He does define religion very precisely: it is a belief in spiritual beings and he does discuss the difference between magic and science. Both, he said, were logical schemes of thought, magical logic being based on a similarity of association, science on a logic of cause and effect. Magic, science and religion, he said, were present in all societies; but the proportions of science increased in the more advanced societies, at the expense of magic and religion.

Sir James Frazer described magic as "a spurious system of natural law as well as an abortive art". Both magic and science were regarded by him as being similar in effect in that both are attempts to produce explicit results from explicit actions. For his comparison of magic and science, Frazer has been criticized by Evans-Pritchard (1933) who said:

> If (Frazer) had compared a magical rite in its entirety with a scientific performance in its entirety instead of comparing what he supposes to go on in the brain of a magician with what he supposes to go on in the brain of a scientist ... he would have seen the essential difference between science and magic. This difference is most strikingly shown in the experimental standpoint on the two modes of behaviour. Science experiments and is open to experience and ready to make adjustments in its notions of reality whereas *magic is relatively non-experimental and the magician is impervious to experience ... since he employs no methods for testing and control.*

Malinowski (1948) is emphatic about the distinction between magic and science (or rather empirical observation) as understood

by his Trobrianders. He gives several examples of their being able to distinguish, the most dramatic being the comparison between lagoon and open sea fishing. When fishing in the open sea which is dangerous and uncertain, the Trobriand Islanders take good care to use plenty of magic. But when fishing in the safe lagoon where fish are plentiful, no magic is used.

Malinowski makes two points relevant to our argument here. First, in general empirical knowledge or science is used where man is dealing with variables he understands and can control or adapt himself to; and he uses magic to deal with variables he does not really understand and feels uncertain about. Second, Malinowski makes the point that at any particular time an individual may be uncertain as to whether natural or magical forces are at work. A sick man may feel himself to be the victim of someone else's malevolent magic while his family may conclude he is the victim of overeating or drinking.

Throughout this brief excursion into early anthropological writing there are two unstated but important assumptions which are misleading to students of society:

1. Magic is something largely found in primitive societies.

2. Magic has something to do with the supernatural.

These two points are related: magic in primitive societies does have to do with the supernatural. But the supernatural is a feature of primitive society, not necessarily of magical behaviour. There is supernatural in the system of law, especially if it includes oracles and diviners; it pervades the practice of healing, of hunting and herding and the growing of crops; it enters into rules of kinship in incest taboos and so forth. Yet we have no difficulty in comparing primitive legal systems with our own — even if there are no courts; we have no difficulty in comparing systems of government between societies that have no states, with those that do; marriage systems can be compared even though by marriage in one society we may mean serial monogamy, and in another polyandry. It is reasonable, therefore, to assume that some unadaptive industrial behaviour should be compared with its primitive counterpart because it does not have the same name — because, in fact, it hardly has any name at all.

A RE-DEFINITION OF MAGIC

A re-definition of magic which will tend to eliminate these rather misleading implications and focus on what I consider the important aspects is now proposed. The definition proposed is:

> Magic refers to those patterns of behaviour in which conscious attempts are made to manipulate variables in the environment but which include no means of comparing results with intents in order to modify the manipulative behaviour.

This definition requires some further explanation. The inclusion of the term "conscious attempts" enables one to bring in the idea of motive or intent. For example to beat a child may be done with intent to punish or to reform. If the intent is to punish, the action cannot be regarded as magical. If the intention is to reform or change behaviour and persists whether or not change takes place it can be said to be magical.

A key phrase in the definition I am proposing is the reference to comparing results with intents. It is not sufficient merely to study the activity itself in order to determine the extent to which it is magical. An action, of itself, cannot be said to be magical; it is when the results of the action are not compared to the intent of the action that the observer can call it magical. Consider the activity of giving medicine in order to cure a patient. The actual medicine given may or may not have therapeutic qualities. But we are not concerned with its actual therapeutic qualities in deciding whether it is magical or medicinal. We are concerned only with the behaviour which surrounds it.

If the act of giving medicine is studied from the point of view of whether the behaviour is modified according to the results it achieves, the distinction can readily be made. If a doctor, or a group of doctors, study the effects of their cures, and change them, they are behaving in an empirical fashion. But if they use medicines, or take other curative action, without studying the effects and making modifications as a result of those effects, then they are behaving like magicians.

The definition also requires a negative aspect: any system of rules of behaviour which seeks to control variables in the environment will also have negative rules which state what must not be done.

It will be seen that this definition comes very close to Evans-Pritchard's (1933) remarks quoted earlier. It also fits in closely with the ideas of Tylor although it goes further than Tylor in suggesting a distinction between science and magic. This definition also fits closely with Frazer's distinction between magic and science although the distinction is made in less disparaging terms.

This definition of magic as being repetitive non-experimental behaviour deserves discussion in terms of Malinowski's distinction between the manipulation of known variables (empirical or scientific behaviour) and the attempted manipulation of unknown variables (magic). Where the Trobrianders were fishing within the lagoon, we would say in terms of the definition proposed above, their behaviour was empirical to the extent that it was varied in terms of the results that were achieved; where the Trobrianders performed actions attempting to manipulate some aspects of their environment which actions were *not* modified in terms of the results achieved, (i.e. which they did when they went deep sea fishing), their activity could be said to be magical.

The redefinition of magic, therefore, involves the concept of what general systems theorists call feedback or knowledge of results (Bertalanffy 1956:1; 1962:10). Behaviour which *is* modified in terms of the results that it achieves is, almost by definition, experimental and not magical. Where some activity is persisted in regardless of the results it achieves, it is magical. It is important to make clear two interrelated points: firstly in focussing our knowledge of results, it is not that the primitive is unaware of the results that he seeks to achieve. If he performs magic to make his garden grow, he knows whether it grows or not. But if he does not compare results of performing actions with not performing them, or with performing other actions his behaviour is magical. The essence of magic, then, lies in the pattern of not reacting to the results of control behaviour. Conversely the idea of modification or experimentation goes beyond the mere receipt of feedback; it involves also the appreciation of feedback to the extent that it modifies behaviour. Secondly, in distinguishing between magical and empirical types of behaviour, I am arguing for a continuum between the two rather than a dichotomy. The position on such a continuum that any particular behaviour pattern might occupy would be determined by the extent

to which knowledge of results is used to modify or confirm manipulative behaviour.

It will be seen that this definition includes everything that has hitherto been called magic by anthropologists among primitive peoples. But it also allows the inclusion of a good deal of business and industrial activity. (And this definition enables the removal of the rather woolley idea of the supernatural which, while not dealt with explicitly by most of the authors cited, nevertheless is implied.) The inclusion of business and industrial behaviour which is non-adaptive as magic enables its proper comparison with other non-adaptive behaviour from non-industrial peoples. It is missing the point, I believe, to describe non-adaptive behaviour in primitive societies in terms of magical beliefs. This does not enable its comparison with non-adaptive behaviour in industrial societies who do not share their beliefs. This point can hardly be overstressed. If we limit our concept of magic in our society to a few vestiges of what was magic in a byegone age we surely miss the whole point of studying magic. The magic studied in non-Western societies (that is apparently irrational behavioural attempts to control or influence aspects of the performer's environment) should be compared with apparently irrational behavioural attempts to control or influence aspects of the performer's environment in industrial society.

RECAPITULATION

I have been arguing that the implication that magic has to do with the supernatural is a hindrance to the wider use of this concept.

First, the concept of the supernatural has not been defined in useful terms, if in fact it can be defined, and this implied qualification of being "supernatural" is a qualification which doesn't concern patterns of behaviour at all, it concerns an inference from behaviour. Second, the study of magic provides a basis on which to approach conservatism and resistance to change, but, if associated with the supernatural, is largely limited to primitive societies. If one's field of study is industrial, one has no means of cross-cultural comparison.

This point requires further explanation. One of the features that characterizes primitive societies is that there is an element of the sacred in all the social institutions.

WHAT IS THE FIELD OF INDUSTRIAL MAGIC ?

There are, nevertheless, marked differences between industrial and primitive magic, and this has to do with what is within the range of empirical behaviour in each type of society. I am going to argue that science and magic tend to be mutually exclusive; that as empirically based efforts to control environment successfully increase, the area covered by magical activity is reduced. Thus while primitive man was concerned with sickness and health; with vengeance and with food production, and with these he used magic, industrial man gets much better results from scientifically trained doctors, law courts, and agriculturalists. Industrial man, however, wishes to influence change, and control his social institutions of production — his factories. For these he often uses magic just as his primitive cousins use magic on their crops and herds. This is not to say that a lot of empirical data is not used by industrial magicians — it is, just as a good deal of empirical data is used by tribalists in crop growing and herding.

Just as the Trobriand Islanders use empirical knowledge in areas in which they are familiar and magic in areas in which they are not, so do industrialists. Broadly, the variables which are studied by the physical sciences constitute the inner lagoon for industrialists and those variables studied by the social sciences constitute their open sea. In other words, variables which are purely physical are dealt with in an empirical manner. Many modern processes require a great deal of technological sophistication and are controlled by people who have professional skills in these areas. For example, chemical processes are designed and are largely under the control of chemists or chemical engineers; in electrical firms electrical processes are designed by electrical engineers and so forth. But in the area of human variables there are not comparable levels of knowledge available and a good deal of activity in this area is magic.

Primitive man, when his magic does not work blames some detail of its application— the rite or the spell — or he blames the counter magic of others. Industrial man, when his magic does not work similarly blames others in non-scientific or magic terms. For example, if his magic is expressed in holistic terms of systems or organizations, then he blames the individual people; if his magic

is expressed in terms of people, then he blames the system or organization for the failure of his magic.

Examples of the first type of activity are given by efforts to design large scale information systems — often around computers. Examples of the second type of activity might be given by efforts of training in which emphasis is put on the individual rather than on work groups; or by blame laying by labour groups or management and vice versa; or by blame of departments of other departments.

Among examples of industrial magic which I have observed are the following :

1. THE CASE OF ROUTE SEGREGATION

This is a case in which a transport utility was observed to go through a series of activities which I shall describe as magical. The apparent purpose of this series of activities was to generate information useful to the control of the bus service.

Like most Canadian bus operations, the fares were deposited in a detachable fare box in the front of the bus. As is common, the fares consisted of both tickets and coins. On arrival in the treasury department's offices, the locked fare boxes were carefully stacked in marked racks indicating from which routes they came. Route by route the mixture of coins and tickets was emptied into a machine which sorted out the coins from tickets, then the tickets were weighed and a dollar value attached according to a rate which was established twice each day in order to take into account variations in the humidity. Eventually the day's takings were plotted against each route covered by the utility and these figures were allegedly used in order to indicate usage patterns which would enable the utility to increase the number of buses on particular routes or particular routes on particular days of the week.

This activity can be regarded as magical because: (a) Calculations from the issue of transfers indicated that approximately 70% of the passengers using the buses transferred onto routes other than those on which they had started. These calculations were made from the transfers issued by the drivers. Since transfers were not put into the fareboxes there was no way of linking the route on which a transfer was issued with that on which it was used. Since

the transfers were issued on one route and collected on another and many passengers were observed to transfer on two or three routes, it can be seen that the accurate allocation of fares to routes (even to the extent of using accurate balances and checking for humidity variations) was completely invalid. (b) The department in charge of controlling the schedules actually relied on information which it believed from observers in the streets and from riding in the buses themselves.

In terms of our definition, this practice of segregating and calculating fares by routes can be classified as magical because it is an attempt to control a part of the external environment without checking on the effectiveness of the activity so that it could be modified if necessary. At the same time it created in the minds of the performers a whole rationale justifying the activity. This could be regarded as an example of positive magic or a conscious attempt to control some part of the external environment.

The second example I shall use will be one in which the behaviour demonstrated is negative in the sense that it is an irrational attempt not to change.

2. RESISTANCE TO CHANGE

This example is drawn from a program of team problem solving in which men on the bench were invited to contribute to the solution of their own work problems by discussing them and proposing trial solutions. The logic of this approach is set out by Robert Gagne (1962) and may be described as experimental and empirical. The program lasted for 12 weeks and met with varying degrees of success. Many problems of a technically mechanical nature were identified and solved in the manner envisaged by the program. Many other problems which questioned the social or organizational status quo were handled in a magical rather than an empirical or scientific manner. It is from this latter group that the following examples are drawn. In the first column of Figure 1 is stated the problem as it was recorded in the problem solving log. These meetings were presided over by the first line supervisor. The second line supervisor (who was not usually at the meetings) gave the replies which are shown in the second column. These will be seen to be resisting change to, or experimenting with, the status quo.

Figure 1

PROBLEMS	STATUS OF PROBLEM AT TIME OF REVIEW AND SUMMARY
Grades (1) It was felt that the grades in the department should be looked into to eliminate any inequalities which may exist.	Second line supervisor informed the groups that all are checked annually.
(2) It was felt that down grading had a poor effect on employee morale.	Second line supervisor explained that it was preferable to being laid off in slack periods.
(3) Concern was expressed at the possibilities of an employee being down graded on returning to day shift from night shift.	Second line supervisor explained that this only happens when there are insufficient higher grade jobs at that time.
(4) Specific jobs in specific departments were quoted as being similar but having higher grades than in this department.	Second line supervisor checked each one and gave reason for the difference in each case to the sections concerned.
(5) It was felt that the porters' job is sufficiently important to warrant a grade X.	Second line supervisor pointed out that the present grading system does not allow this.

In these examples it should be clear that there is no attempt to answer the questions in the form that they are given or in a form that could lead to any kind of problem solving activity. The underlying assumption behind is "leave the grading system alone. In any case, it is not your function to discuss it". This assumption follows the principle of implied certainty and can be classified as magical, based on the implied myth of the unchanging nature of personnel practices, one of which was the grading system.

SOME METHODOLOGICAL ASPECTS OF THE STUDY OF MAGIC

We have to focus on actions rather than beliefs. This is fundamental to my argument, although I am aware that it runs counter to some recent approaches by the Waxes (1963) and Beattie

(1966). Thus we will distinguish between magical and scientific behaviour on the basis of there being *activity* or not to test results. But we have to be aware of intent in order to be able to distinguish between magical and non-magical behaviour and in both simpler societies and complex organizations this raises the problem of an activity involving more than one role. For example, the magician or medicine man may provide a client with medicines and rituals the effectiveness of which he himself doubts, but which he is happy to provide for the payment he receives. His activity is not really magical at all. The user of such services, though, is acting magically if he does not test the effectiveness of his actions. Similarly the purveyor of goods and services who is unconcerned with the effectiveness of the goods and services he is selling may be fulfilling his own objectives of selling and could not be said to be acting magically. But the behaviour of a manager using those goods and services without testing their effectiveness would fall within the suggested definition of magic.

MAGIC AND SOCIAL THEORY

General System Theory

It is fashionable now-a-days to describe phenomena in terms of information systems. Many systems theorists are extremely ambitious in their claims for this approach. For example, Forrester (1958:52) describes an enterprise or company as:

> A system in which the *flows* of information materials, manpower, capital equipment, and money setup forces that determine the basic tendencies towards growth, fluctuation, and decline.

In terms of this approach, phenomena are depicted in terms of the black box model:

control
↓

input ⟶ PROCESSOR ⟶ output
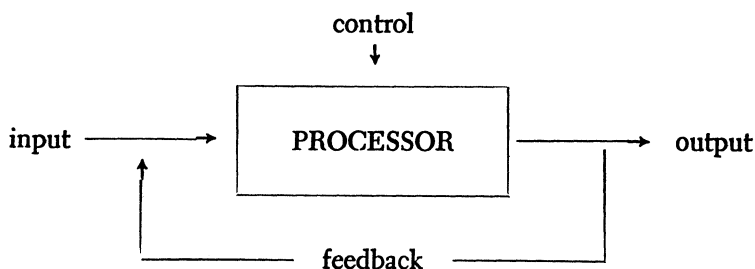
feedback

The black box model is concerned with inputs, outputs, and feedback. In industry it focusses on rational management being able to modify input in terms of the results (i.e. output) it achieves through knowledge of results (i.e. feedback).

Magical practices can be described in terms of:

input behaviour ⟶ [   ] ⟶ results
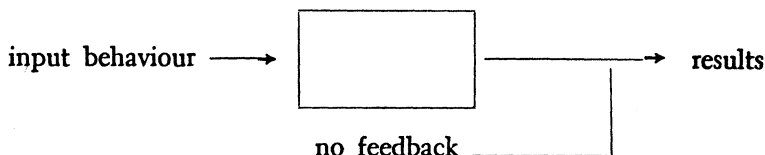
no feedback _____|

Because there is no feedback, no modification takes place so the input behaviour does not change and becomes magical or ritual-istic. The pressure or not of feedback or knowledge of results consti-tutes the difference between scientific and magical behaviour. It will be seen that this is essentially a diagrammatic way of describing what Evans-Pritchard (1933) meant when he said:

> Science experiments and is open to experience and ready to make adjustments in its notions of reality whereas magic is relatively non-experimental and the magician is impervious to experience.

Hall's Major Triad

Edward T. Hall (1959) proposes a threefold division of culture into formal, informal and technical. Formal culture constitutes those patterns of behaviour which are so automatic as to almost constitute a social instinct. The way in which language is taught to children by their parents is an example. People are conscious of their formal culture but are not prepared to think of alternatives.

Informal culture constitutes those patterns of behaviour which are out of awareness. To quote Hall (1959):

> The informal is ... made up of activities or mannerisms which we once learned but which are so much part of our every day life that they are done automatically.

Technical culture is that part of it about which one is fully conscious and explicit. Hall describes the technical behaviour in filming and minutely analysing expert skiing in order to arrive at a system for teaching it. He contrasts this with the formal learning

of skiing in a mountain village where it is an extension of walking. Children learn to ski as they learn to talk by precept and admonition. There is no alternative to skiing, just as there is no alternative to talking.

Hall also compares this to the informal learning of Sunday skiers who pick up skills by watching others and are relatively unconscious of how they have learned what they have.

Hall's major triad does not constitute mutually exclusive categories. In any pattern of behaviour there may be all three aspects of the triad present. But one would predominate.

It seems to me that a good deal can be learned about repetitively irrational behaviour, or magic, by observing whether it is mainly concerned with formal, informal, or technical aspects of culture. It provides a basis for classification and therefore further understanding. Thus in the case of the supervisor who refused to take up suggestions in the problem-solving meetings he could be said to be thinking of these matters as formal aspects for which no alternatives were possible. The men were raising problems which could have been treated technically, and this was certainly the aim of the consultants who instituted it.

In the case of route segregation on the bus line, the practice was undoubtedly introduced as a technique of control at a time when it may have served a useful purpose. When circumstances changed the practice continued and became part of the formal aspects of behaviour.

I do not have any first hand observed cases of informal magic, but I can describe the conditions under which they can predictably be found. When people of one society borrow from people of another they are of course, selective. To use Hall's (1959:6-8) terms again, they tend to borrow sets rather than patterns. The suburban mansion borrows the columns for the front of the house from the Greeks. The Basotho wear Western suits under their traditional blankets and conical hats. This borrowing behaviour is informal. Unspoken latitudes in dress, for example, are exploited by individuals in copying foreign habits. These are then copied again and new patterns emerge.

It is obvious that this practice of borrowing is not confined to primitive peoples with regard to dress and machinery, it quite obviously goes on all over the world. Within the Western world, the idea of keeping up with the Jones', that is of maintaining status by accepting change, is an accepted part of the consumer economy.

Practices which are borrowed from one manager by another may be magical in the informal sense, i.e. magical to the extent that they are repetitive but with no knowledge of results — informal to the extent that they are learned, or borrowed almost unconsciously. What is the relevance of Hall's major triad? It is that the persistance of magical behaviour is better understood against the background of the major triad. Degrees of formality, informality and technicality vary even within the firm. Anyone wishing to change behaviour patterns must have an awareness of the cultural background in which they are embedded. Hall (1959:91) suggests:

> If a person really wants to help introduce culture change, he should find out what is happening on the informal level and pinpoint which informal adaptions seem to be the most successful in daily operations. Bring this the level of awareness. Even this process can only accelerate change, not actually control it in the manner desired by men of action.

Mill's Sociological Imagination

Mills (1959) defines the sociological imagination as the ability to distinguish between issues and troubles, and argues (1959:8) that the social scientists' main function is to make such a distinction and to explain the issues and troubles of society:

> Troubles occur within the character of the individual and within the range of his immediate relations with others; they have to do with his self and with those limited areas of social life of which he is directly and personally aware. ... Issues have to do with matters that transcend these local environments of the individual and the range of his inner life.

He implies, though not saying so directly, that if there is a sufficiently large column of social scientists thus engaged, together with a number of other professions to whom the sociological imagination is relevant, that their work will enable society as a whole to respond differently and adaptively to their issues and troubles. But Mills does not explain why adaptation does not necessarily follow when such explanations have been made.

Yet, even leaving aside sociological matters, there is considerable evidence that managers in industry do not heed the scientific advice of their operations researchers. To quote from C. West Churchman (1964:31):

> Unfortunately, we have overwhelming evidence that available information plus analysis does not lead to knowledge. A management science team can properly analyze a situation and present recommendations to the manager, but no change occurs. The situation is so familiar to those of us who try to practice management science that I hardly need to describe the cases. Some of my graduate students undertook to write to the authors of cases reported in OPERATIONS RESEARCH over the first six years of its publication to determine to what extent the recommendations of the studies had been carried out by management. In no case was there sufficient evidence that the recommendations had been accepted.

Mills (1959:129) states very clearly proposals for the handling of substantive problems, of which magic would be one. Substantive problems should be formulated,

> In such a way that their very statement incorporates a number of specific milieux and the private troubles encountered there by a variety of individuals; these milieux in turn are located in terms of larger historical and social structures.

In these terms the problem of magic can be set out as follows. Business and industrial organizations find themselves increasingly in environments which change rapidly. Men in control of such organizations frequently, if not continually, try to make changes within their organizations to accommodate the environmental changes. Frequently they are frustrated in such efforts by persistent patterns of behaviour which are inappropriate to the changing conditions of the external environment or to the changes planned for the internal organizations even if such changes are studied and explained with appropriate mathematical elegance.

I have tried to show that some of this resistant behaviour should be regarded as magical and it threatens the values of those who seek to introduce changes on a more empirical basis. In the case of the bus utility discussed earlier, middle management's insistence on route segregation conflicted with top management's desire for a more efficient operation. In the case of the supervisor refusing to take up the problems of his subordinates, he was frustrating values of the levels below him even though the problem solving program had the blessing of management above him.

If individuals in industrial groups are to acquire the sociological imagination; that is if they are to be able to distinguish troubles from issues, then they must be able to identify and explain magical behaviour in contrast to adaptive or experimental behaviour. Yet so much management literature concentrates on defining adaptive situations in ideal terms without trying to explain the existence of non-adaptive irrational conditions which it is hoped to overcome. In Mills' terminology the role of the holder of the sociological imagination with regard to magic would be to identify its existence perhaps as an underlying issue to many troubles and then to suggest a modification of behaviour along the lines of knowledge of results.

CONCLUSION

Let me restate the problem of industrial magic in a different way. For what men perceive as problems which they believe they can solve, or at least influence, they often develop repetitive control practices. For some such practices they observe the necessity for checking on the effectiveness of them. When they act in this way (i.e. in an empirical way) they build up knowledge about the casual relationships between their practices and the results they seek to achieve. This knowledge is used for further experimenting and so on. Such behaviour patterns are explicit and would be classified by Hall as technical.

In other circumstances men apply repetitive solutions to what they regard as problems, but the solutions they apply are regarded as so unquestionably the thing to do that they do not check the effectiveness. Curiously, unlike the case in many non-Western societies such behaviour is not related to beliefs in the supernatural, but nevertheless in terms of my re-definition, should be described as magical. Hall would describe practices which are "unquestionably the thing to do" as part of the formal culture.

Does classifying some magical behaviour as being formal explain it? Only partly, I believe. Men may be prevented from checking on results for either of two reasons, the first of which is that to do so would be to challenge the formal. A second possible reason for not checking on the effectiveness of manipulative practices is that they are part of the informal culture. They are not checked because

they are not sufficiently near the level of consciousness to be considered worthy of checking.

For example, styles of supervision which have received some attention in the management literature (R. R. Blake, W. J. Reddin) are mostly learned informally. Different management styles can be described as differing patterns of behaviour which are chosen by supervisors informally. They are differences allowable by the formal system which are exploited in an informal way by individuals, and insofar as such behaviour is informally adopted it is not at the forefront of consciousness and it simply would not occur to a manager to check on the consequences of such behaviour. Can behaviour which is not at the forefront of consciousness be considered as magical in terms of our definition? Yes, it can in this sense: the practitioner of a magical ritual is *consciously* aware of what he is doing and the reason for which he is doing it. But if he acquired the pattern of it informally, he may be unaware of the process of its acquisition.

SUMMARY

In summary the argument of this paper has been to identify repetitive non-adaptive behaviour in business and industry as magic. While this does not clash with the classical definition, it does clash with the implied qualification that magic has something to do with the supernatural. Magic is redefined and, to some extent, discussed in terms of system theory, Hall's major triad and Mills' sociological imagination.

These notes are only an introduction. Industrial magic requires study with regard to its place in the social structure (who are the magicians of industry?), and its function (why do managers choose magical over scientific approaches?).

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REFERENCES

BEATTIE, J.
1966   Ritual and Social Change. Man 1:60-74.

BERTALANFFY, L. VON
1956   General Systems Theory. General Systems 1:1-10.
1962   General Systems Theory — A Critical Review. General Systems 7:1-20.

BLAKE, ROBERT R. and JANE S. MOUTON
1964   The Managerial Grid. Houston, Gulf.

CHURCHMAN, C. W.
1964   Managerial Acceptance of Scientific Recommendations. California Management Review 7:31-38.

DURKHEIM, EMILE
1961   The Elementary Forms of the Religious Life. New York, Collier.

EVANS-PRITCHARD, E. E.
1933   The Intellectualist (English) Interpretation of Magic. Cairo. Fouad I Université. Faculté des Arts. Bulletin 1, Pt. 2.

FORRESTER, J. W.
1958   Industrial Dynamics: a Major Breakthrough for Decision Makers. Harvard Business Review 36(4):37-66.

FRAZER, JAMES G.
1911   The Golden Bough. 3d ed. London, Macmillan.

GAGNE, R. M., ed.
1962   Psychological Principles in System Development. New York, Holt, Rinehart and Winston.

GOODENOUGH, W. H.
1963   Cooperation in Change. New York, Russell Sage Foundation.

HALL, EDWARD, T.
1959   The Silent Language. New York, Doubleday.

MALINOWSKI, BRONISLAW
1948   Magic, Science and Religion, and other Essays. New York, Doubleday.

MILLS, C. WRIGHT
1959   The Sociological Imagination. New York, Grove.

REDDIN, W. J.
1966   The Tri-dimensional Grid. Industrial Canada 66(9):24-31; (10):24-30; (11):17-20; (12):29-30.

TYLOR, EDWARD B.
1871   Primitive Culture. London, Murray.

WAX, MURRAY and ROSALIE WAX
1963   The Notion of Magic. Current Anthropology 4:495-517.