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Working Paper

GAME ANALYSIS

An analytical framework to bridge the
practitioner-researcher gap in negotiation research

Laurent Mermet

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Foreword

Bridging the gap between researchers and practitioners through the creating of opportunities for exchange of ideas and experience is one of the main aims of the PIN project. One of the problems to be dealt with in this connection is the difference in world view and problem-structuring that exists between practitioners, who are participants in negotiations, and researchers, who are observers. Thus bridging the gap is not just a matter of transferring more actively research results and lessons from experience. It must also affect research design, and ideally this should involve both practitioners and researchers.

This paper of Laurent Mermet discusses the issue at the level of the paradigms through which, implicitly or explicitly, negotiation research structures the object of its inquiries. It points out fundamental reasons which give the game paradigm -in a very wide sense- a unique capability to structure the reflections of both researchers and practitioners in a way that helps to facilitate and enhance their mutual communication and understanding.

The issue is analysed here in an abstract perspective, but the conclusions point to a range of applications in debriefing methodology, applied research and training. an example of such an application is presented in detail in another working paper issued in parallel with the present one: On Getting Simulation Models Used in International Negotiations - A Debriefing Exercise; L. Mermet, L. Hordijk.

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Introduction

This paper focuses on a discussion of the five major paradigms currently involved in negotiation research: mechanism, process, system, field, and game. It scans their respective potential to cope with two challenges of negotiation research. The first is to bridge the gap between practitioners and researchers. The second is to clarify the ambiguity, present in most analysis, between those characteristics of a negotiation which stem out of the specifics of the problem being negotiated, and those which pertain generally to the negotiation process itself.

The discussion will show that the game paradigm, although currently less systematically used than the others, has a unique capacity in both these respects. It needs; however, a thorough reexamination, to which much of the paper is dedicated. Our conclusion is that a systematic reflection on, and utilization of the game paradigm, provide a sound basis for a wide range of applications which can be labelled Game Analysis, and are quite useful in negotiation research and other similar fields in which the practitioners' present and past experience is a crucial factor.

The researcher-practitioner gap

Discussions on the basic problems of negotiation research, such as those surrounding the launching of the PIN research project, have underlined two major difficulties that the negotiation research field will have to face.

The first is the gap existing between researchers on the one side and practitioners on the other (1). It can be sketched by just two questions: the one that practitioners ask about analysts: "is he really useful?" and the one asked by analysts about practitioners: "do they realize what they are actually doing?"

Why is there such a gap?

Part of the answer is certainly in obstacles of a contingent nature. One is the rarity of opportunities to meet. Another is the fact that researchers and practitioners live practically in two separate worlds widely differing in values, in methods, in language, in time constraints, in incentive systems .... To overcome such contingent obstacles, it is necessary to foster communication through workshops and conferences, to provide incentives for the application of research work, and for the sharing of their experience by practitioners. The PIN network and the PIN Conference are such efforts.

But beyond this level of contingent difficulties, there is a deeper ground for the practice-analysis gap, which is that some of the world-views researchers base their analysis upon can be held only from an uninvolved researcher's position, and cannot be used by participants in the phenomena they describe. Reciprocally, some descriptions of their own experience by practitioners are "formatted" in a way that makes them difficult or even practically impossible for researchers' use. In other terms, to establish fruitful actor-observer collaboration, it is indispensible that both the practitioner and the analyst operate within a framework of reference, or analytical framework, such that what they experience and discover will possibly be exchanged and eventually synthesized.

Such a framework will have to fulfill, amongst other things, the following major condition: it must be able to accommodate both the points of view of the involved participant, and that of the rather detached observer, on the same situation.

The content-process ambiguity

A second difficulty in negotiation research is that the aim of negotiation is not only to agree, but both to agree and solve a certain problem. Negotiatiors are, at the same time, managing the negotiation tactics and strategies, and addressing the particular problem which is the content of the negotiation. So to a large extent, much of what they do is actually structured by the problem itself. This is a difficulty for negotiation research: ideally, one would like to be able to isolate patterns of negotiation which are independent of the problem being negotiated. But when doing research, one is far from that ideal.

In a case study on a negotiation, much of the process described is linked to the content of the negotiation. It is difficult, for example, to adopt a general methodology for such studies, beyond adopting a check-list on some information one would like to find as standard features in a case-study. This has led some historians and policy-science researchers to question the specificity of negotiation research (2).

The same problem exists, at the other extreme of the research field, in formal theoretical studies on negotiation, and in particular in game theory. When we speak of zero or non-zero sum games for instance, we refer not to the negotiation process, but to the structure of the problem being negotiated. The message concerns negotiation rather indirectly: "in the negotiation process, do not mistake non-zero sum situations for zero sum ones." From this point, the research work splits in two divergent directions. The first is a search for solutions and optimums through mathematics, which is a typical case of the structure of the problem providing a proposed process. Incidentally, this work applies not specifically to negotiations, but to all processes that can address the considered problem. The second trend of research is a practical reflexion on: how to reach solutions suggested by the structure of the problem, but in the setting of real negotiations (3)? This is a qualitative reflection, often useful, but vulnerable to a questioning of whether this is science, or clever self-help.

To sum up, the difficulty of articulating analysis of process and of content is a durable stumbling stone in the constitution of a coherent and specific negotiation research field.

Questioning paradigms in negotiation research

To deal better with these difficulties, negotiation research will have to be partly re-examined, but at what level?

There are indeed two main separate levels of products in the field:

- case studies and experimental work are concerned with empirical facts. If the work is well done, the facts they state will receive agreement of all. But the lessons they teach - and thus their usefulness - will be a matter of interpretation, grounded out of the case or the experiment itself, and thus very debatable.

- theoretical and pragmatic generalizations are concerned with the characteristics of all, or of complete classes of negotiations. Here, generality of statements is a promise of usefulness, tempered however by the possible lack of agreement on the validity of the statements.

These two levels of "products" imply the existence of two other levels of work:

- methodology, which concerns the articulation of fact and theory, of case and general statement. The issue is either how to identify or fabricate a case which will prove or disprove a general statement, or reciprocally, how to find rules on how to derive valid generalizations from a case or set of cases. Without sound methodology, case studies are bound to multiply but remain fruitless, and theories to expand but stay aloof from application.

- paradigms, which are the basic concepts through which the negotiation situation is pre-structured, or perceived, even before it is discussed, be it on a case or on a theoretical basis. When we describe characteristics of the negotiation process, or system, or game, we do not just describe the patterns we have identified in our case study or theoretical reflexions, but we also assign to negotiation the structure of a process, a system, a game. The structuring provided by a paradigm rests on a fundamental metaphor, even if concepts like mechanism and process have become so used in all fields of social science that it is hardly still realized that they are a transposition of physics and chemistry respectively into the social world. However, the understanding provided will find both its basis and its limits in those of these metaphors. The existing 1paradigms provide alternative basic world-views or analytical frameworks, which will communicate their various characteristics to all the products of negotiation-research.

Since what is sought here is an analytical framework bridging the gap in world-views between practitioners and researchers and clarifying the structure of the content-process articulation, it is this paradigmatic level of negotiation research which will have to be addressed first.

The consequences for theory, methodology, and thus case studies will derive from that effort.

What are, indeed, the main paradigms underlying negotiation research?

Mechanism

The structuring of a situation provided by the mechanism paradigm is simple: agent A-acts-on patient B- with result R. The deep metaphor is clear: it is that of the most elementary action like cutting bread into pieces, or painting someting green. The same paradigm grounds the cause-effect relationship.

Needless to say, this paradigm is almost everywhere. How well does it serve negotiation research? There are two basic ways to use the paradigm in the field.

The first is to consider the negotiator as the agent, his opponent as the patient, and negotiation as the agent doing things to the patient to get certain results. It is a conception of negotiation as a manipulation(4).

The practical limitation of this conception is obvious: it requires that one negotiator be much more clever, or powerful that the other. This is generally not the case in negotiations.

This practical limit comes from the following limits of the paradigm:

- thinking in terms of mechanism does not allow to consider feed-back - that is, the patient affecting the agent,

- thinking in terms of mechanism cannot take a variable context into account: this is the classical "ceteris paribus" clause.

Negotiation is basically interactive, and extremely sensitive to dynamic contexts. It is thus clear that one has to — and does — resort to paradigms other than mechanism-manipulation.

The second possible use of the mechanism concept is to consider (a) the negotiation as the patient, (b) someone who wants to improve the negotiation as the agent, and (c) improvement as the result of action based on some understanding of a causal relation. This is the impact approach for instance in the following problematique: What effects will various types of facilitation interventions have on negotiations (5)? Here the paradigm is more promising, because the dissymetry it implies is present in the real situation. Hopefully the intervenor has the advantage of training and of a relatively detached perspective, at least as lucid as the negotiators'; or the authority manipulating a negotiation on which it is responsible has enough power to do so. However, the paradigm will still find its limitations in the complexity of negotiation, a complexity which the linear chains of mechanism cannot adequately accommodate. To address the mechanisms of intervention, one will still have to resort to analysis based on more complex paradigms.

This is regrettable because the mechanism paradigm has a great advantage to bridge the theory-practice gap. Describing how the mechanism works tells what the agent can do to influence it. This works wonders in the love story between bio-physico-chemical sciences and technology, a love-story that has not yet begun between process — or system — based social science approaches and their potential users, for reasons that the discussion below on other paradigms will help clarify.

Process and system

Process and system can be best treated together here. They are related deeply, and in a way that gives them the same pros and cons with regard to the research-practice gap and the content- process ambiguity. Both the process and system paradigms install the same basic structure: state of affairs S1 leads to state of affairs S2 (which in turn leads to S3, etc...). In the process image, each state of affairs is constituted of elements with attributes; the transformation results from interaction of elements. In the system image, the focus is on the global structure of the state of affairs (the system), of which elements and their attributes are only components; it is the characteristics of the state of affairs itself (not just of the elements) that will shape the transformation. In both images, there is some room (though limited) for influences of some contextual factors ("external" factors).

The process paradigm is widely used in negotiation research(6). It has even made its way into the name of the IIASA PIN program. The elements of a state of affairs are the negotiators with their attributes (interests, cultural style, ...) and some elements of the situation itself: stakes, rules of procedure, etc ... Negotiation then consists in a transformation of the initial situation through successive transformations brougth about by interactions and external factors until the final stage, the outcome, is reached. This view is so pervasive as to seem to be a straight description of reality itself; as will be seen, it is not beyond critique and discussion.

A first limit of the process paradigm is that it can accommodate only limited complexity. With two, three, four negotiators in one or two interaction scenes, it is productive to follow the line of transformation of the process, and to trace back its properties to elements, attributes, and factors in the negotiation. However, with hundreds of negotiators, and several or many interdependent interaction

scenes, this view is no longer productive. The line of transformation is harder to follow, and above all, its characteristics often cannot be traced back to any identified elements, but only to the overall structure of the situation at a given movement - thus the necessary replacement of the process by the system paradigm to address complex multi- party multi-issue negotiations (7). In brief, the process paradigm is fit to describe negotiations of limited complexity, and the system paradigm to the more complex ones. In both cases, the situation is viewed in terms of a successive transformations of a structured state of affairs.

How do these two paradigms perform in terms of the two concerns underlined earlier: the research-practice gap, and the process- content ambiguity?

As concerns the research-practice gap, they imply a contradiction between the observer's and the participant's world views. The observer's ideal would be that if he knew the state of affairs S at step s, he would be able to deduce what will happen, and what the state of affairs S1 will be at step s+1. For the participant to prepare action, it must be the case that S+1 depends as largely as possible on what he does. The same will be true for all participants: they will strive not to be subjected to the situation: good strategic action generates unpredictability. It is only after the negotiation has occured that both practitioners and researchers can agree on a description and interpretation of what has happened. Process and systems are great paradigms for descriptive case studies. But they are a poor basis for the preparation of action, and thus, for validatable understanding of how negotiation works.

Process and system paradigms are also problematic from the point of view of process-context ambiguity. As an example, one can imagine two countries negotiating over the management of a river. Suppose also that the negotiatons are protracted so that the evolution of the river-problem with time will affect the negotiation, and the negotiation process will in return have an impact on river management, and thus on the evolution of the river problem. How should this situation be structured? The river, so the bio-physico-chemical sciences tell us, is adequately represented by a bio-physico-chemical system (undergoing, if one wishes, a transformation process). Should river and negotiation be mixed into a wider negotiation system? Should the river be viewed as a specific sub-system of a wider "negotiation on the river" system? Should the negotiation process be viewed as connected with the river-system, and if so, what should the structure of the connection be? A certain confusion reigns on these questions in the current state of negotiation research. Often, in qualitative case-oriented monographs, problem-

related and negotiation-related processes are loosely intertwined, decisions of negotiators being attributed alternatively to factors in the problem and to the relations with the opponent. In theoretical research, the emphasis is, more often than not, on the structure of the problem shaping up the negotiation, the subtleties of tactics and of the human factors being reduced through more or less radical preference hypotheses. The process and system paradigms tolerate a lot of fantasy in dealing with the content-process issue, but they contribute little to structuring it in a productive fashion.

In brief, the process and system paradigms are good frameworks for a post-mortem or a static description of negotiation. But they suffer structural limitations when it comes to bridging the practice-research gap with respect to preparation of action or to clarifying the ambiguity between negotiation process and negotiated problem. To overcome these limitations, the field and game paradigms as discussed below are eminent candidates.

The field paradigm

While the mechanism, process and system paradigms represent largely an attempt to carry over basic problem-structurations from the bio-physico-chemical sciences to the social sciences, field is a paradigm that is mostly developed and applied in the latter. The emphasis of the field paradigm is on context. The image is that of a space w.....in which different location, or situations have specific characteristics in terms of certain attributes; actors in these situations will find themselves in specific contexts with a bearing on their actions, thoughts, communications, etc... The field, however, does not determine actions or communication: it gives them a meaning (8).

In negotiation research, a good point of application of the field paradigm is cultural research: how are similar moves differently interpreted by negotiators situated differently in the cultural field (in different social classes as for instance) or in different cultural fields (in different civilizations for instance)? How, in the same actual context, do similar intentions and perceptions lead to different actions and communication? Also based on the field paradigm is negotiation research focusing on perception, and interventions to improve negotiation which are based on reframing, that is, a modification of the way the participants perceive the structure of the situation.

In terms of field, action is not understood so much in terms of its results, but rather of its intentions, of its conception, of the meaning of its context, of its preparation. Field is a unique paradigm for both researchers and practitioners to understand the situation of a negotiator, and what it implies in designing communication and action.

However, the paradigm has its own limitations. It enlightens the ecology of action and communication, but does not address their consequences, or only indirectly, as they are - or are not - perceived by the actors. It illuminates the content of negotiation, but veils the objectivity of the problem being negotiated. It clarifies the process-content ambiguity, so to speak, by evacuating the content: all becomes perception and communication. There is no reality of problems beyond what actors perceive as such.

This has a bearing on our other preoccupation: the practice- research gap. On the one hand, the field paradigm helps bridge the gap by providing a good basis for practitioners and researchers to discuss the labile contents of action, perceptions, situations and perspectives, beyond the operational aspects of a negotiation. But, practitioners do have, often enough, operational preoccupations: action demands, from their perspective, that one considers there is a reality on which to act: a river, a forest, a demography, etc. ... Social science, when restricted to perceptions and meanings (i.e., to the field paradigm) tends to aggravate practitioners, and has met over and over again with difficulties in use.

So the field paradigm complements the three previous ones both in terms of process-content relation, and of the communication between researchers and practitioners over the preparation of action. But it still suffers severe limitations which might be overcome by an analytical framework integrating the mechanisms-process-system and the field perspectives. The game paradigm can provide such an analytical framework.

Game

In negotiation research, and in other related areas as well, the image of a game, and the use of concepts related to the game paradigm are quite pervasive. First, abstract, theoretical research on negotiation, decision-making, policy-making, resorts often to an analysis of situations in terms of games. This is true of course of game theory. But it is also true in a more implicit way of other approaches, like decision analysis for instance. A decision tree is based on the

assumption that decision-making in real life is structured in the same way it is at a card or roulette table: to assess probability and value of gains associated with different strategies, and to play accordingly. Incidentally, the concept of mathematical expectation, on which decision analysis relies was proposed by the 17th century French mathematician and philosopher Pascal to help his gambling friends reflect on the more basic choices in their personal life.

Second, experimental research in the field relies heavily on simulations. Be they quantitative or qualitative in orientation these simulations rest on stylized negotiation situations which are staged, leading to the organization of what are really simulation games.

Third, in their daily reflections and discussions, which structure largely their perception of their own experience, practitioners use consistently metaphors which describe their practice in terms of games, using expressions like; "stakes", "winner and loser", "rules of the game", "moves", etc.

However, there is as yet no general analysis integrating these various uses of game concepts into a general framework comparable, for instance, with systems analysis, even taking into account the ambiguities, diversities, and contradictions which exist in the latter. In the more quantitative approaches to games, only a few simpler kinds of games are involved. They are also treated in a way that reduces the specificity of the game situation, through strong hypotheses on the rationality of actors, or through a probabilistic treatment of uncertainty. Game theory, for instance, is far from an extensive, multidisciplinary and coherent use of the game paradigm such as is envisaged here. Experimental simulations strive to discover, through the manipulation of various parameters, what determines the negotiators' behavior. Although the experimental setup is a game, its exploitation pertains clearly to the mechanisms- process-system paradigm. Gaming rests on a very heteroclitous array of definitions and theories of games.

This is not the place to discuss the various existing theoretical approaches of the game concept, or to introduce detailed elements of a new approach. It should be enough here to retain in short those elements which relate to the use of game as a basic paradigm for negotiation and other strategic action situations. It should be noted, in particular, that existing conceptions of games stop short of a step which is necessary for the game paradigm to be exploited systematically. It is to see that the concept applies to real life social phenomena -a trial, a firm, a negotiation, ...- and not only to their simulated, stylized or modelled representations. This more extensive use of the concept requires a discussion of the issue of "seriousness" in

games. Actually, as it is presently used, the game concept is somewhat ambiguous. It is used:

- to point at what separates fun games from the serious situations of real life ("this is serious, this is not a game"),

- to point at the element of fun and playful involvement which can exist even in the most serious situations ("I enjoyed playing stupid as a tactic in this nego-tiation"),

- to point at the fundamental structures that fun games and social life have in common ("rules of the game, moves, winners and losers in elections").

It is this last meaning which must be retained here: that the serious games of real life, their simulations for training and research, and the fun games of spare time share a common structure, which is the game paradigm.

What is this structure? What kind of very general basic framework does think-ing in terms of game provide for the negotiation issue?

The example of simulation games suggests the following basis for an answer. Such games involve two layers:

- the "accounting system" - or "institutional model", which is the set of rules which governs the outcomes of the players' moves

- the behavior of players, and the communication between them, outside of the formal codes of the accounting system.

How does current negotiation research address these two levels in the simu-lated or real "negotiation games"? As its name indicates, the accounting system can be very well represented in terms of the mechanism-process-system para-digms. Actually, most work on games and on negotiation deals with this layer of negotiation.

The behavioural layer - that where players give their own meaning to the situation, communicate informally among themselves, prepare their inputs into the accounting systems (that is, their actions) tends to be either:

- reduced to insignificance or even non-existence through devices such as rationality hypotheses,

- left open by default or by a totally loose flow of qualitative comments;

- separated from the system level.

The first two attitudes fail to provide intelligibility of many aspects of player's behaviors, by not recognizing that these are inserted in a field of meaning and communication which cannot be reduced to an "accounting system".

The third, as discussed earlier about the field paradigm, fails to propose proper links between the informal communication in a negotiation and the operational problems addressed by the negotiation.

So there is a second step to take beyond the current partial uses of the game concept. It is to recognize that the communication around the accounting system (communication which is the essence of negotiation) is also structured, but cannot be understood fully in the same terms of mechanisms, processes, systems. It is to use the field paradigm as the proper analytical framework when it comes to meaning and communication. It is finally to articulate the field of communication and the accounting system into a wider structure: that provided by the game concept.

From the above discussions emerges a basic, global image of a game as a system of physical and institutional rules and constraints, surrounded by a field of meaning and communication. Both levels are distinct, but interdependent in a way that is not formalizable independently at either level. The moves of the players can affect one layer or the other, or both distinctly. This image — the game paradigm — applies both to fun and simulation games and to the serious strategical situations of social life, in particular, negotiation.

How does this view apply to a full-scale negotiation? As an example, let two countries again negotiate over the management of a river. The content part, understood adequately in terms of mechanisms-processes-systems, can be viewed as three layered:

- the actual river, Nature, which will always escape total description;

- the river as it is known through science, and handled through technology, is a physical "accounting system" through which a given set of physical actions will determine a given result;

- the rules, procedures, economic dealings through which the problem is handled constitute a second layer of accounting system; to a move, an institutional action, they associate "quasi-mechanically" a given outcome. This layer is distinct from the former one; the "interactions" between institutions and bio-physico- chemical phenomena, if they exist at all, differ fundamentally from those within each of these layers. But both layers can be understood in terms of mechanisms (hydrological or budgetary), of processes (reproductive

or legislative), of systems (ecological or legal).

"Around" these content systems there is another layer which is both the one crucial to make a game, and to make a negotiation: a field of informal meanings stakes, communications. Such a field is at once both structured and impossible to formalize completely. Indeed, if it is formalized completely in a specific situation, and thus becomes predictable, then negotiators will have an interest to generate unpredictability and to divert the system, making its previous description obsolete, and so on ad infinitum. It orients communication and behavior, but does not determine them. It can be fruitfully discussed, but never totally accounted for. It will evolve with the evolution of the state of the issue in a significant, but not totally predictable, way.

Different aspects of the field are referred to by terms like personality, cultural style, competitive atmosphere, body language, good manners, and many others, forming a quite disparate collection. It is the elusive material of social life, which various disciplines of human (or social science) endeavor to capture.

How does this game paradigm relate to the paradigms discussed previously? It can be said that the content part is adequately describable in term of mechanisms, processes, systems. For the bio-physico-chemical part, the scientists tell us so. For the social system this will hold with a restriction: it is true as long as all one wants is to describe organization and their mechanisms. But it becomes problematic as soon as one wants to understand how they are brought into play in actual practice. The other layer, the play layer has then to be included to make sense. Things are more intricate at the "play" layer. Mechanism, process and system paradigms will still be used here, but on a different basis - that is, only with a metaphorical value. They will be images carried over from the worlds of nature or of rule, to help us grasp the elusive aspects of the social fields. But if they are taken literally, the salt of social action, of tactics and strategy, is lost, and practical value falls. At this level, the best available paradigm is the field as we have described it earlier.

How does this basic structuration provided by the game paradigm perform in terms of bridging the research-practice gap, and clarifying the content-process ambiguity? In a game, players and spectators have different but clearly specified roles. The spectator cannot participate in manipulating the system, but he participates in the field surrounding the game: his comments create or modify significations and in particular, the context of the players' actions, and thus, their decision making. The observer also gets the comments of the players, and thus is able

- as the analogy with any game demonstrates - to see the situation from the players' point of view, even though it may differ from his. Reciprocally, the notion of being a player in a game supposes a possibility of acquiring a distance to the situation, of "stepping out" in mind to think as if one were an observer.

The game paradigm structures the negotiation situation in a way that supports both analysis by the observer and preparation of action by the negotiator. Furthermore, considering the communication field in the negotiation, within which they both operate, observers and negotiators can analyse not only what they see, but also their relations and the bearing of these on the negotiation.

As for the content-process ambiguity, the game paradigm provides a necessary clarification by allowing a clear distinction to be maintained constantly between the particular mechanics of a problem, the determination of procedures, and the meanings in the communication field around them.

Here again, the game paradigm does not just distinguish, but also articulates. The game is the interplay between the system and the significations the players attribute to it. It is the unique human capability that natural and social laws will radiate a field of signification within which actors will move in a way both free and significant. It is the unique capability that we have of transforming the elusive meanings we attach to things into laws of society and nature, and thus build a world of our own.

If negotiation is so crucial in running our complex societies, is it not because of the same qualities? What seems an impasse of natural or social mechanisms, it allows to turn into flexible perceptions to be probed tentatively in discussion. And what seems a volatile agreement of opinion, it will transform into a contract, a project, a treaty, a fact that will then become part of the social or natural systems, and acquire, so to speak, a life of their own.

Applications

As the focus of this paper is on paradigms, the applications of the game analytical framework will be discussed only very briefly here.

As is the general case with the "sciences of action", in the field of negotiation research there is no lack of facts, and no shortage of proposed interpretations. The difficulties met are rather in validation, in applicability of research results, in the use of practitioner's experience to supply material for research and

training. These challenges in the development of "sciences of action" research are indeed problems in transfer of understanding:

- from practitioners to researchers (mobilization of experience),

- from researchers to practitioners (application of research, education and training),

- between researchers ("valid" knowledge is one that transfers from scientist to scientist with minimal distortion of understanding, and maximal acceptance),

- between practitioners (post-event spontaneous debriefing and self-training of practitioners).

What are the perspectives for use of the game paradigm as discussed above, in these four areas (of which the first two constitute the potential bridging of the practice-research gap)? First, the mobilization of practitioners experience for research and training purposes is increasingly recognized as important, widely used and quite useful. Done in a spontaneous fashion as in lectures or memoirs, its efficiency is limited however by the fact that much of what makes a practitioner effective remains implicit (because too obvious to him, or unconcious, for instance), and largely escapes transfer. The practitioner's tendency is rather to underline this or that aspect of his activity which he considers as intriguing, original, generally overlooked, etc. ...

The notion of debriefing was thus introduced, to mobilize the practitioners experience more systematically. Doing so improves significantly the transfer of understanding from practitioners to researchers (10). However, the basic difficulties just mentioned about "spontaneous debriefing" remain, although to a smaller extent. This has suggested to me the use of the game analytical framework presented here for systematical debriefing. I have used it experimentally once already, leading to propose methodological tools to apply the game analytical framework in debriefing practice, and to suggest directions for a more detailed construct on the analysis of games at a theoretical level (as defined earlier in this paper) (11).

Second, application of results of social sciences (or "sciences of action"), and training of practitioners in these fields is notoriously problematic (12). In an effort extending over the years, I have been endeavoring to synthesize the teachings of a wide array of case studies and methodological studies on the strategic aspects of environmental management. The aim was to turn these research results

into a coherent expertise approach, and make it available to practitioners (13). Main difficulties were the heterogeneity of the analytical frameworks of the studies themselves, and the difficulty to find perspectives general enough and useful for both observers and actors in the decision processes. The last two difficulties are the ones discussed at the beginning of the paper.

It is this problematique that led me to the development of the present analysis of the game paradigm. On this basis, I was able to articulate an initial set of more or less empirically heterogeneous methodologies into a detailed and coherent approach to problems of strategy and negotiation in environmental management. This provides an example of the possibility to build, for a certain field of application, a specific game analytical methodology, based on the game paradigm as discussed in this paper (14).

The two applications just mentioned are an example of the renewed use of the game paradigm which is advocated here. If the analysis in this paper is correct, if the results of these first applications fulfill their promise, its potential to bridge the research-practice gap is important, and much remains to be done to tap it.

As discussed earlier, there are already many applications based on the game concept, resting either on an empirical basis, or on partial theoretical formulations of the concept, such a game theory (see note 9). They can only benefit from a more comprehensive and systematic analytical framework. This can help improve further the design of application (in particular in gaming). It can allow better situating of the various analytical approaches to assess their potential, to discuss their relations. So, by its capacity to integrate the existing narrower analytical frameworks, the game paradigm is a good basis for transfer of understanding between researchers — the third point in our discussion of solving the transfer-of-understanding problems in negotiation research. But there remains a challenge to go beyond this integration of narrower paradigms. It will be, in further work, to answer the question: "how best can one understand a game apart from in reductive terms of mechanisms, process, system, or field?" It has too often been assumed that because simulation games are small and made by us, we understand how they work. Whoever has had to debrief a complex gaming session knows otherwise. A new understanding of games is needed both for fun and simulation games and for life-size games, and the first will contribute to the second.

As for the fourth type of transfer - practitioner to practitioner - it has already been mentioned that game metaphors are pervasive among "practitioners at coffee-breaks and other informal encounter before or after negotiations; these

are the professional equivalents of the debriefing of soccer games as practised in dressing rooms. The analysis above provides a rationale to continue this practice, and a challenge to improve it.

Conclusion

There is a Zen saying that goes: "When the finger points at the moon, the fool looks at the finger ..." If paradigms are like finger-positions pointing to different structures and aspects in negotiation, this paper has discussed and compared finger- positions for their respective merits. These were assessed mainly in terms of potential for bridging the practice-research gap and for clarifying the content-process ambiguity - two main stumbling blocks in negotiation resarch. On this basis, the paper has proposed and defended a certain shift in the finger position: that towards the game paradigm.

Game metaphors are currently used pervasively to underline this or that aspect of negotiation; they also ground an array of separate methodologies, from gaming to decision analysis. But these rely largely on implicit or on artificially restricted notions of game. A reexamination of the game paradigm shows that it is wider than the others most currently used ones (like mechanism, process, system, field) and that it can integrate them. It has also shown to be more relevant to the "sciences of action" - such as negotiation research, for its unique capacity to deal with the practice-research gap, and the process-context ambiguity.

Using a game analytical framework more systematically to structure our investigation of negotiation can both bring more coherence, understanding and applicability in some current theories and methodologies, and initiate new developments in negotiation research. The game paradigm seems to be the potential basis for a more ample and coherent field of analysis than is presently realized and that could be labelled Game Analysis.

Alas, discussing paradigms is not an immediately rewarding effort. Indeed, while discussing points of views from which negotiations can be viewed we have turned our back to negotiation itself, and — fools of a moment — haven't seen much of it.

While more detailed applications could only be discussed very briefly here, the results of the effort, the concrete and usable products of a more systematic use of the game paradigm, will become visible only as we turn around and look at what the newly positioned finger shows us. But if the analysis presented here is

correct, if the first applications currently being developed hold their promises, new perspectives in negotiation theory, methodology in negotiation study, and negotiation practice and case description are bound to develop.

Notes

[1] At the task force meeting on PIN held 9-10 December 1985 at Laxenburg, bridging the gap between practitioners and researchers emerged as one of the main themes to be addressed by the PIN project.

[2] This difficulty was raised, for instance, at the September 23rd, 1985 meeting of the French PIN Network, in particular through the intervention of Mr. Duclos (Centre d'Analyse de Prospective, Minist re des Affaires Etrangeres).

[3] These two trends of research are illustrated by numerous papers in the PIN Conference.

[4] The approach presented by H. Cohen in his book: "You can negotiate anything" (Bantam Books, 1982) is a good illustration of this conception.

[5] This type of approach is well illustrated by: Pruitt, Dean G., 1986, Trends in the Scientific Study of Negotiation and Mediation, Negotiation Journal, Vol. 2, No. 3, July 1986

[6] On conceptions of negotiation in terms of processes, see Zartman, I. William, ed. 1978. "The Negotiation Process: Theories and Application". Beverly Hills, Calif.: Sage Publications.

[7] See Kremenyuk, A., The system of international negotiations and its impact on the processes of negotiation, paper to be presented at the PIN conference, IIASA, Laxenburg, 18-22 May 1987.

[8] On the theory of fields, see Willard C. Arthur, 1982, Argument fields, in Cox, J. Robert and Willard, C. Arthur, eds. Advances in Argumentation Theory and Research, Southern Illinois University Press, 1982.

[9] But there are many interesting publications presenting various perspectives on the game concept and its use. Here is a short selection of references relevant here:

-    On Gaming:

   •   Duke, R.D. Gaming: The Future's Language, Beverly-Hills: Sage Publications, 1974

   •   Stahl, Ingolf; Operational Gaming - an International Approach; IIASA Pergamon Press, 1983

- • On Game Theory and its use in negotiation:

- • Von Neumann, J., Morgenstern, O; Theory of Games and Economic Bahviour; Princeton University Press, 1953

- • Raiffa, H.; The Art and Science of Negotiation, Harvard University Press, 1982

- – On the game concept, its philosophical basis and daily use:

  - • Huizinga, J.; Homoludens - A study of the play element in culture, London, Routledge and Kegan Ltd., 1949

  - • Caillois, R.; les Jeus et les Hommes - le masque et le vertige, Gallimand, 1958

  - • Carse, J.P.; Finite and Infinite Games - A vision of life as Play and Possibility, Macmillan Free Press, 1986.

[10] On systematical debriefing in the negotiation field, see Wheeler, M.; Protocols for debriefing practitioners, Program on Negotiation working paper 85-2, January 1985

[11] For a presentation of this work and of its first results: Mermet, L. and Hordijk, L.; On getting simulation models used in international negotiation, a debriefing exercise paper presented at the IIASA PIN Conference, Laxenburg, Austria, 18-22 May 1987

[12] See for instance: Holner B., Knorr K.D., Strasser H.; Realizing Social Science Knowledge, Vienna, Physica-Verlag, 1983

[13] This effort is presented in: Mermet, L.; Aims in Nature, Means in Society, unpublished, IIASA 1986.

[14] The approach referred to here has been used by the author for the first time in a one-week workshop for practitioners of natural resources management, at the Ecole Nationale du Genie Rural, des Eaux et des Forets, Paris, in December 1986. It will be presented in writing in three further papers, (which are summarized in the document identified in note 13).