In view of the prevailing ambiguities, impressionistic beliefs and perhaps distortions that shroud the contemporary deterrence theory and the various strategies of deterrence associated with it, this paper attempts to break fresh grounds, particularly in the area of threat credibility. By focusing the level of analysis somewhere between the individual personality and social structures and thus using a social psychological approach, it attempts to explain the behaviour (as related to the credibility of deterrence threats) of national decision-makers, during acute international crises. After analyzing and re-evaluating the relevant literature in the field, the paper presents a functional model of threat perception involving two opponents. The model takes into account such variables as: (1) basic human needs; (2) role of reference groups; (3) credibility and specificity of international threats; (4) leaders' intentions and predispositions; and (5) self-perception of threats. The major conclusions of the paper are: (1) no communicative means for influencing human behaviour are uniformly effective because of the problem of distortion of perception; and (2) the effects of the threat-induced fear on decision-makers' rationality cannot be taken for granted. In fact evidence suggests in most cases rationality under high fear is impaired because fear tends to reduce the range of clues which are available for the consideration of the threatened party.

The nuclear deterrence theories continue to be shrouded with ambiguities, impressionistic beliefs and perhaps distortions, particularly with regard to its all important ingredient, the concept of 'threat credibility'. Deterrence thinking has been structured on common sense beliefs and observations of how men and states behave under threats of punishment. These beliefs about aggression, perception of threats, and the nature of man have recently received the attention of many investigators in both the physical and social sciences.

In an interesting empirical study, Russett found that apart from the factor of military superiority, political and economic factors are also of importance in deterring an aggressor. A major road block in the development of a viable theory, particularly in the understanding of the concept of "threat," is the tendency for international relations scholars to continue to personify the state, attributing to it all those human qualities shared by mankind.

A social-psychological approach to the concept of "threat credibility", crucial to a viable deterrence theory has been discussed by Herbert, Katz and Waskow. An attempt has been made in this paper to build a social-psychological model of deterrence threat in which the actors are states defined in terms of official decision-makers who do not behave as discrete individuals but as participants in a given socio-political-psychological setting. The concept of "threat" and the notion of 'deterrence' itself are analyzed and re-evaluated along with an analysis of some of the contemporary deterrence strategies, preceding the presentation of the model.

**ANALYSIS AND RE-EVALUATION**

Deterrence is the basic concept underpinning contemporary nuclear strategies. It is the simple notion that aggressive behaviour can be discouraged, prevented, or deterred by posing a threat that could lead to the imposition of severe sanctions on a would-be aggressor if he violates certain prescribed norms of behaviour. Deterrence in relation to power may be thought of as "the ability to prevent certain threats or actions from being carried out by posing an equivalent or greater threat" or "Deterrence is concerned with the exploitation of potential force. It is concerned with persuading a potential enemy that he should in his own interest avoid certain courses of activity." A key ingredient in deterrence theory is 'threat' which permits the exploitation of potential force and presumably persuades the enemy to modify if not altogether abandon his predicted behaviour. A deterrence threat is also a conditional threat of punishment for an action, where both the specified action and carrying out of the threat are deemed undesirable to the 'threatener'. Deterrence threats are not always successful as no communicative means for influencing human behaviour is uniformly effective under all conditions. Looking into all the aspects of the deterrence threats the practical question to be posed here is 'how can a government make its threat more effective?'

The exception to this type of threat is a short-term threat or bluff which masks reality which is effective only for a short period till it is exposed and invalidates its credibilities. Hence a threat that is not effective cannot be credible, and if it is not credible it cannot deter. A threat will be credible if there is a reason to believe that the one who makes the threat is both able and willing to carry it out with a proof that he can do so.
A threat, being credible, must be perceived, understood, and feared by the adversary and should invoke rational response. Rationality as defined in terms of self-interest, however, has its limitations. The theory has received much criticism on this point, and one must be extremely cautious upon relying entirely on the self-interest explanation of rational behaviour. A threat induced fear may not necessarily invoke a rational response. And, if it should be the case\textsuperscript{10,11} that frequently the effects of fear are to impair rational thinking, then the theory is opened to further criticism.

Mutual nuclear deterrence has posited a simple goal, to avoid nuclear war while at the same time preventing major power encroachment upon smaller powers. Deterrence theory maintains that this goal can be achieved by making a credible threat, but in response to what makes a threat credible several strategies of deterrence have been developed, each claiming credibility and each supposedly aimed at deterring possible aggression by threatening to make aggression "costly". The authors of these strategies share a basic faith that failure to adjust to the changing military political situation will lead to destruction and chaos, whereas adoption of a 'good' strategy will stabilize the military situation and thus eventually lead to a reduction of tensions among nations. In addition, there is a common assumption that national decision-makers are functionally rational, and therefore, a rational strategy is one which makes the costs and risks to a potential enemy of launching an attack greater than his probable gains\textsuperscript{12}. Deterrence strategists sharply disagree as to the level of response a nation should employ in retaliation against the enemy.

Proponents of a "graduated deterrence" strategy\textsuperscript{13,14} insist that the response must always be made at the same level as the attack. Raising the level of response runs the risk of creating an unstable situation by over-reaction, which may end in an all-out thermonuclear exchange while a lower level of response is also undesirable for it will fail to deter high level attacks. Adherents to the doctrine of 'massive retaliation\textsuperscript{15}" the strategy of responding with thermonuclear weapons on population centres regardless of the level of attack, reject the graduated deterrence plan as economically unfeasible. Maintaining sufficient capability to respond to all level would endanger the national economy and threat of massive retaliation is itself sufficient to deter attacks at all levels. Another group of deterrence strategists agree that an all-out attack with thermonuclear weapons should be countered with a response at the same level, but attacks at all other levels must be met with tactical atomic weapons as far as possible in order to maintain a "limited war" situation. No nation will actually carry through massive retaliation in response to a less drastic attack for fear that the attacking nation will launch its own thermonuclear retaliation\textsuperscript{16,17}.

Kahn\textsuperscript{18} has argued quite bluntly that in order to minimize the probability of a nuclear war, a nation must threaten and be prepared to go well beyond the finite doctrine associated with an invulnerable counterstrike capacity, that is, to be fired only for retaliatory purposes. He makes a case for a counterforce, and hence for a credible first-strike capability. Without the combination of strategy and capability one cannot make a credible threat to deter the wide range of behaviour with which an adversary might be inclined to confront a state. A nation ought to engage in the sort of behaviour which is to deter the adversary, but if actually employed, would almost certainly compel the nation to opt for a pre-emptive strike. The problem which could not be realized is that given the complexity of contemporary international crisis situations, both the counterforce capability and an elaborate civil defence system that is recommended cannot help but give an overwhelming impression of a first-strike preparations rather than a retaliatory intention. On the other hand, one could ask, of what use is a large scale evacuation shelter programme if a nation is resigned to accepting the first blow? It is difficult to escape the conclusion that to acquire the capabilities recommended by Kahn will almost certainly mean to generate a high degree of fear in the mind of the adversary coupled with a rising expectation on his part of a surprise attack.

Schelling disagreeing with Kahn argues that a threat can be made credible if the adversary knows his behaviour will unalterably commit a country to a course of action that this country probably does not prefer to take but cannot avoid. Schelling says "it involves confronting him (the adversary) with the evidence for believing that our behaviour will be determined by his behaviour\textsuperscript{19}.

Schelling & Halpern suggest that a nation can and must collaborate with the adversary to increase interdependency\textsuperscript{20}. International conflict is not and should not be regarded as a pure zero-sum relationship, and between enemies there is always a modicum of cooperation sustained by a mutual realization that certain outcomes of the rivalry can be mutually advantageous as well as catastrophic. Based on this premise, a strategy was developed which has come to be known as "finite or minimum deterrence."
It calls for a non-provocative set of military capabilities and doctrines. Most particularly, both sides are admonished to opt only for a strike-back or a second-strike force, and to eschew anything suggestive of a first-strike intent.

There are dangers inherent in Schelling and Halpern's approach. First of all, in order to adhere to these self-denying stabilizing ordinances, a nation must create an 'invulnerable' retaliatory capability. Having achieved this, a nation is to await any assault by the adversary with impunity, knowing well that its cities and factories will be obliterated not only by the first strike it is honour-bound to face, before starting anything on its own, but also by the inevitable retaliatory blow in response to its own retaliation. Secondly, the authors are assuming that a more or less self-imposed restraint in the research and development of further new weapons will be exercised by both parties based on a mutual conviction that an attempt by one side to get ahead of the other will trigger a re-armament race which is considered mutually disastrous.

In both Kahn's and Schelling's notions of an effective deterrence, military strength is emphasized at the expense of political and economic considerations. Russett argues that political and economic ties of interdependency between a defender and the defended is an important deterrence factor which no adversary is likely to overlook. It is submitted that particular indices of political and economic interdependence emphasized by Russett are perhaps of less significance here in themselves as compared to the indicators to whom Deutsch has often referred to as 'mutual sympathies and loyalties', the 'we feelings'. The preceding analysis of various strategies of deterrence as related to the question, what makes a threat credible, indicate that scholars have frequently failed to broaden their investigation to include social-psychological variables in their search for a more viable theory of nuclear deterrence. The following social-psychological model is developed in an effort to remedy this situation.

THE DETERRENCE THREAT—A SOCIAL-PSYCHOLOGICAL MODEL

Major Aspects of the Model

The model developed assumes that a state's foreign policy is primarily the product of external threats which are perceived by its leaders. This assumption does not deny the importance of domestic forces in shaping foreign policy-making. It simply emphasizes external threat perceptions, a basic assumption undergirding deterrence theory.

Three major concepts intertwine throughout the model. The first is threat credibility (TC). The model seeks to explicate why one threat may be believed while another may not be believed. When a threat becomes credible, it is largely dependent on the second concept—the 'threshold of threat perception'. It is assumed that no two actors will perceive a given threat in exactly the same way. The level of threat perception is dependent on variables such as predispositions and physiological needs held by the threatened party at the time the threat is made.

The third concept is the 'perceived immediate reality'. This concept encompasses the preceding two concepts as well as the notions of political culture and objective reality. The perceived immediate reality is set in a particular political culture, a culture that makes each actor's behaviour unique in some respects. Objective reality is defined as those activities and behaviour which are devoid of subjective interpretations.

CONSTRUCTS AND VARIABLES

Actor: A single decision maker, the President or a collectivity of decision makers.

Reference Group: A group which helps the decision-maker but is without any official responsibility.

Perceptual Screen: A 'black box' which filters and sorts incoming stimuli into an intelligent world and whose working is not fully understood.

Political Culture: The psychological dimension of a political system consisting of “attitudes, beliefs, values, and skills which are current in an entire population, as well as those special propensities and patterns which may be found within separate parts of that population”.

Basic Needs: Wants, needs or drives that produce tension if not satisfied.
**Self-Perception**: It is how the actor defines his role in a given setting which is tied closely to the personality variable and political culture.

**Threat Capability**: The objective factors which materially contribute to making a threat credible.

**Predispositions**: Trust, suspicion and tension level.

**THE MODEL**

The threat perception model is structured about two actors A and B with each having perceptual screens (a) and (b) respectively (Fig. 1). Various stimuli inputs are converted into threat perception output stimuli which form a cognitive pattern or image on the mind of the actor.

To analyze the model, one can begin with the numerous inputs that feed into the perceptual screen. An indispensable input emanates from the basic needs. Taken as a whole, this input largely determines and regulates the threshold of threat perception. The threshold level varies according to the strength of the derived produced by the basic needs. It can be hypothesized that the greater the imbalance between the four postulated basic needs—physical, affective, self-esteem, and self-actualization—the higher the threshold of threat perception. In other words, it will take a much greater effort on the part of actor A to convey a threat to the second actor B. At the extreme, for example, one can say that an actor who has a distorted need for the satisfaction of self-esteem may well be invulnerable to an otherwise credible threat. In terms of rational behaviour, an irrational actor is not responsive to “rational” threats.

A second complex of stimuli that flow into the perceptual screen may be categorized under the rubric of threat credibility (TC). As depicted in the model, two factors—capability and intentions (I)—are synthesized and resolved into a single output, which in turn, is an input into the perceptual screen. The capability factor is embedded in objective reality as indicated by its position in the model. Intentions, on the other hand, are lodged in the perceived immediate reality. They may be composed of (1) actions that another state takes, and/or (2) statements made by the other actor. Two major hypotheses may be formulated with respect to threat credibility:

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Fig. 1—Threat perception model (BN—Basic needs; RG—Reference group TC—Threat Credibility, I—Intensions, ST—Threat specificity, P—Predispositions, SP—Self-perception)
The third array of input stimuli emanate from the respective actors' predispositions (P). These predispositions—trust, suspicion, and tension level—regulate the qualitative character of the incoming stimuli and influence the threshold of threat perception. Trust and suspicion tend to be inversely correlated. As suspicion increases, trust decreases and may become transformed into distrust. At the same time this is not always an isomorphic relationship. Suspicion may oscillate considerably before distrust is manifested. In any event, the degree of trust or suspicion held by one actor tends to either dampen or amplify other stimuli inputs. In sum, it may be hypothesized that as the level of trust increases, threat credibility stimuli decreases.

Tension level is another very important factor that regulates stimuli inputs. Tension is not a predisposition akin to those of trust or distrust, it is an ever present state that varies with time, setting, and threat specificity (ST). In an excellent discussion, Davies has outlined the relationship between tension level, threat specificity, and responsiveness of the threatened actor (Fig. 2).

Tension significantly influences threat perception and the consequent behaviour. Psychological experimentation tends to confirm the hypothesis that as tension increases, a decision-maker tends to become more rigid and repetitive in his thinking and behaviour. Furthermore, the threat is magnified and may cause dysfunctional behaviour (this is the point on the curve in Fig. 2 where fear prevails). Psychological experimentation also supports the hypothesis that as tension increases, a decision-maker tends to oversimplify the problem. Once again the propensity for distorting a threat is high.

The last component in the model that requires some explanation is self-perception (SP) (the dotted line extending from the actor to the perceptual screen). This variable acts as a boundary, circumscribing the perimeters within which the other stimuli must fit. It is the ego reinforcing mechanisms When there is an incongruence between self perception and other stimuli in the perceptual screen, threat perception becomes muddled and may cause gross perception errors. The actor may overestimate the threat or underestimate it, in either case, a serious mistake may ensue.

CONCLUSION

The model outlined in Fig. 1 is a composite set of ideas developed on the subject. An attempt has been made to integrate the various approaches into a model of threat perception. The model is orientated to threats with specific attention directed to deterrence theory. Specifically, an effort has been made to synthesize social and psychological perspectives.

REFERENCES