Figure Ia is used by physicists to denote a stable system. There is only one stable state of the system, which is modelled by the location of the ball at the bottom of the "potential well." By contrast, figure Ib denotes an unstable situation. That is, the ball will only stay on the top of the hill if it is perfectly centred and completely unperturbed.

The only figure of the three which adequately models the current stability of the world's nuclear system is the metastable figure Ic. "In the short-term deterrence is stable but in the long term it will surely fail. On our current path, nuclear war is inevitable."

Hellman used a probabilistic model to show that the ". . . many random events constantly perturbing the state of the world: coups, civil wars, natural disasters, regional wars, misinterpretations, $C^3I$ false alarms, etc." would cumulatively lead to nuclear war. He drew an analogy between nuclear strategy and officers' roulette. On the first round your chances of surviving are good, but if you continue to fire the trigger round after round your chances of not hitting the chamber with the bullet are negligible.

He used the Cuban Missile Crisis as an example of how a single decision could destabilize the world's nuclear system. President Kennedy's advisors had recommended that the US military make a "surgical strike" to remove Soviet missiles from the Western Hemisphere, but later it was concluded by these same advisors that, far from correcting the problem, the strike would have led to a catastrophic world war. Such a strike would have been enough to dislodge a metastable ball from its perch. In closing, Hellman argued that the only way to move from a metastable to a stable world situation would be to abandon war because, by definition, a nuclear world could not be stable if war remained an accepted part of international relations.

John Lamb provided a critique of both Hellman's and Leng's papers. He began by noting that the conference had frequently returned to the proposition that the greatest risk of accidental nuclear war was posed by crises. The purpose of the present session, which was considering Leng, Niezing, and Hellman's papers, was to go further and relate crisis behaviour to the prospect of accidental nuclear war. Lamb disagreed with Hellman's analogy of nuclear strategy to officers' roulette. He argued that one could not ascribe equal weight to each disturbance in the state of the world, which was what he thought Hellman had done. Crises between nations are not analogous to turns in officers' roulette which in each case has the same set of circumstances and the same probability of leading to a catastrophe. He did not believe that the danger caused by crises was cumulative but thought that crises might be cyclical. Lamb did not believe that nuclear war was inevitable, but he did agree that the world situation was urgent and that new attitudes and institutions were needed to circumvent man's apparent need to resort to force in solving disagreements.