Naval War College Review

Volume 8
Number 1 *January* Article 3

1955

Economic Factors Affecting Strategy

Donald O'Connell

ECONOMIC FACTORS AFFECTING STRATEGY

A lecture delivered
at the Naval War College
on 8 September 1954 by
Professor Donald O'Connell

I

I feel deeply honored to be permitted to participate in this enterprise upon which you are engaged. No student of economics could fail to be intrigued, moreover, by the challenge you have presented to your guests from that field. Economics is one of the social sciences. No more provocative invitation could be extended to an economist than that he attempt to formulate the bearing that the techniques and principles of his discipline might have for men in another discipline daily occupied with preparation for one of the greatest social problems any man must face, that of preserving society's structure and values in a world in which utter destruction of them both is a possibility.

Since you must consider every sphere of knowledge that might contribute to your equipment as strategists, it is not surprising that you have included economics. There is a kinship between economists and military strategists. Economists often describe themselves as being concerned with the study of the most effective means to achieve given ends. They refer to economics as a science of choice. This is because they deal with the conditions of physical existence. Material means are finite. Men's wants do not seem to be. The science of economics attempts to indicate which, among the conceivable means of employing material and human resources to achieve given ends, is the most efficient. Economists are people who read, write, talk and think about alternatives. And so are military strategists.

One of the things that keeps economists interested in their work, and sometimes vexed by it, is that it is always shrouded in uncertainty and marked by severe limitations in the degree of control that can be exercised over the materials of investigation. Military strategists confront the same difficulty.

There is an especially close kinship between economists and *naval* strategists. Whereas the traditional mission of land armies has long been formulated in terms of seizing or defending territory against armed opposition, the world's naval forces have often been quite as much absorbed in serving as the instruments of economic warfare as in confronting, containing or overpowering hostile naval power. The mere utterance of the words blockade, embargo, contraband, summons up reflection on the economic role of naval forces.

Although the present era, with its formalization of "military government," its "unification of the armed services" and its preoccupation with industrial mobilization, imposes on all strategists — of whatever service attachment — the obligation to include economic consideration in their reckoning, the Navy's historic role in economic warfare and economic defense may inspire special curiosity about the possible usefulness of systematic economic calculation.

II

The experimental character of the course of study at the Naval War College suggests, of course, that the assimilation of economic analysis into the deliberations of the strategist has not gone as far as you consider might be profitable. On the economists' side, I presume to say, less continuous thought has been given to strategical applications than the importance of strategical ends warrants. Leaving aside such shortcomings as my own, therefore, one can say that the strategist and the economist need to work more closely together than heretofore for quite some time before economics can make a maximum contribution to strategy. The terms of the partnership have yet to be worked out. The value of the economist's potential contribution has still to be appraised.

The problems on which the strategist might legitimately expect information and reasoned judgment have, to a large extent, still to be defined. Only frankness concerning the limitations on each side can clear the way for the development of an applied economics in the field of strategy.

I shall attempt to observe that rule of frankness immediately by telling you what I conceive strategy to be. You will understand that my only aim in doing this is to save you the trouble, later on, of appraising the judgments or explanations that I shall later offer on the bearing of economics on strategy. By knowing my frame of reference, you will be able to make your own adaption of what I say about economics.

III

I conceive strategy, then, to be the art of designing a policy that will govern the action to be followed in the pursuit of a contested objective. The objective *may* be military; but the art of which I am thinking might quite as well be applied to economic, political, even cultural, objectives.

A strategy, on this line of thought, would be some one among the different policies adopted in pursuit of a chosen goal. In the pursuit of a national goal of durable security, for example, alternative strategies might include those of (a) all-out preparation for a test of strength, (b) the building of alliances to achieve a balance of power stalemate, (c) bargaining with limited concessions to achieve peaceful co-existence, (d) the purchase of peace through submissive adaptation, or (2) the development of an association of nations inspired and effectively organized to expose and dissolve conflicts of interest. (It goes without saying that not all of these strategies would exist as possible alternatives in all contests.)

Although one would be understood if he were to speak of a strategy of bluff, of deception, of clarification, or of confrontation, especially where the contested objective is a limited or instrumental one, I shall use the word strategy more broadly. Its reference will be to an objective involving a dominant aspect of the total interests of the entity (say, the nation) entertaining a grand policy of action. For convenience, we might refer to deception, bluff, and so on, as practices within a strategy.

For a statement of the dominant elements of the strategical situation I should like to borrow and adapt from games theory, as associated with the names of John von Neumann, the mathematician, and Oscar Morganstern, the economist, with whose path-breaking work *The Theory of Games and Economic Behavior* you must be familiar. The dominant elements are four: choice, interdependence, chance and imperfect information.

No strategy is possible where there is no *choice* of action. A skeet-shooting contest does not place a strategy-making burden on the contestants. The deliberate missing of a bird could not ever bring one closer to victory. Tennis, on the other hand, does; throwing away the third set in order to regain one's strength may be the best way to increase one's chances of winning a four or five set match. *Interdependence,* one might call the distinctive element of the strategic situation. From the sallies of courtship, through the bluffs of poker, the competetive advertising of big business, the trial baloons of politics, and the thrusts and parries of warfare, the dependence of one player's decisions on the other's actions is inescapable. *Chance,* while not always present in the strategical situation, is rarely completely absent from it. Life is chance, and if I may amend Bishop Butler I might say that if "probability is the very guide of life," it may be a very undependable guide unless chance is purely random and its results predictable in the long run. Like chance, *imperfect information* may or may not be present in the strategical situation. But although it may be absent from the strategical deliberations of the chess player, before whom the opponents' dispositions are fully exposed, I need not labor the point that in matters of international policy, information concerning others' resources and operations is always imperfect.

A common factor characterizing all four elements of the strategical situation is, obviously uncertainty. It is a major function of the strategist to reduce it as affecting himself, while, if possible, increasing it for his opposite number.

The similarity between economic affairs and military affairs is perhaps as clear in the respect of their both being affected by uncertainty as in any other respect we might imagine. In a competetive struggle between two great giants of industry each side is usually quite uncertain of the effect that his own policies may have upon the other's fortunes, uncertain as to how his opponent might react to these policies, and uncertain of his own ability to meet such counteraction. The theories of oligopoly are testimony to the difficulties that economists have confronted in even formulating the types of problem involved. The military strategist's task of appraising the sensitivities, resourcefulness and strength of potential enemies is, I presume, no more easy.

IV

I have been stressing the similarities that one may detect in the work of economists and strategists. I think that a final similarity must be mentioned before I attempt to suggest the uses to which strategists might put economic analysis. Economists, I have said, do not choose objectives. If they are asked to describe the most efficient way to achieve conditions of stability in agricultural income, they will attempt to conceive or discover and then appraise, in terms of effectiveness and cost, alternative methods by which the objective might be reached. Yet economists do attempt to expose inconsistencies among objectives. Thus, they would feel qualified to demonstrate that the objective of a guaranteed, high level of income for every farmer would be consistent with the attainment of a flexible pattern of farm production regularly adapting to shifts in consumer demand.

They would feel qualified to argue that a governmental policy designed to guarantee full employment might be inconsistent with one designed to maintain stability of the price level. "You can't have everything," the economist would say. "Just as I am prepared to show you the most efficient means to any given end, so am I prepared to help you, indirectly to be sure, formulate a combination of mutually compatible ends."

Strategists, I take it, operate under the same type of self-denying ordinance as do economists. They may have more to say about whether any single end is attainable at all than economists do, for they are commonly under a stronger compulsion to reach decisions which may be irreversible. But their prime role, as I understand it, is, like the economist, to show the way once the objective has been defined.

V

Without some assumption, however, concerning the grand objective toward the fulfillment of which current strategical considerations must be directed, it would be difficult for me to be as specific as I should like to be about the applications of economics to strategy. I assume, therefore, the major objective of assuring peace and progress for the nation in a world of tension. I suggest that the strategical problem involved may be broken down into five component parts or tasks. The *first* has to do with increasing one's own strength against the possibility of hostile action by any other nation or combination of nations. The *second* is to identify the nation or nations most likely to undertake aggressive action against one's self or one's allies. The *third* is to avoid any action that will contribute to the strengthening of potential aggressors and, if possible, to devise actions that will weaken him or them. The *fourth* is to become prepared to bring one's own strength to bear against the likely aggressor's weaknesses in case of a showdown at any moment. The *fifth* is to foster the development of a world situation in which any other nation's resort to war would be unprofitable, not only because he would be unlikely to win it, but because the availability of non-warlike means of settling differences would reduce his ability to justify resort to war to his own people and allies.

In seeking to describe the means to fulfill each of these five tasks, the strategist must inevitably face, if not actually be hampered by, choice, interdependence, chance and imperfect information. In the execution of some of them, the economist may be of help. I shall try to suggest the ways.

From well before the time of Adam Smith until the present day, economists have written of a nation's strength in terms of its wealth, or, at best, of its undifferentiated productive resources, including the strengths and skills of its working force. Since the time of Adam Smith, most economists have been in agreement that a nation's wealth could be most surely increased by a policy of giving fullest scope to specialization in production. Through specialization in the production of those commodities and services in which each locality and each nation enjoyed the greatest relative advantages, economists have generally supposed that products could be produced where production could be carried on at least cost and sold where the demand for them was greatest. This commitment to specialization lies at the heart of the policy of free competition and free trade.

It is true that the nineteenth century saw develop on the Continent of Europe a school of economists unwilling, for nationalistic reasons, to accept the possible consequence of a policy of international free trade; that one's own nation might prove to become, because of a slow start in industrialization or a relative paucity of natural resources, a subordinate factor in a world inhabited by a few economic giants and many weaker members. Nineteenth-century America had its own dissidents from the policy of laissez-faire, and for the same reasons. In our own time, the distaste for the consequences of free international markets is freely exibited in the economic policies of many western nations. It is also, but for no persuasive reason, manifest in some aspects of United States trade policy today. Its most understandable and defensible manifestation in the present era is found among the underdeveloped countries.

Despite these qualifications, I think the bulk of economists would say that specialization in the development of one's own richest resources and acquisition by trade of products one can obtain more cheaply eleswhere is the soundest purely *economic* principle for increasing the strength of the nation. Should the strategist demur, the economist might suggest that a distinction could be drawn between the nation facing the near prospect of war and the nation entertaining it as only a remote possibility. He would grant that for the former, production might have to be concentrated on essential military and civilian items that could be more cheaply obtained elsewhere in peacetime but which might be unobtainable except at home during war. For the latter case, I think, he would ask the strategist if it would not be sounder to develop more flexibly and voluminously in order to raise the general level of productivity over time as the best possible hedge against a currently unformulated challenge.

Far more important for the strategist than any of the qualifications I have noted are two additional ones that have been quite fully exposed by the economists who have been the expositors and defenders of free markets. They are qualifications to the proposition that a nation's wealth can be most surely increased within the framework of a free market system. The first is that freely competitive markets, even if once clearly established, do not necessarily tend to maintain themselves. The second is that, quite apart from anti-competitive developments, a free market may give the consumer what he wants without giving the nation what it needs.

Free, competitive markets tend not to maintain themselves in industrialized countries. Where economies of large-scale production are available, larger firms can become more efficient than smaller ones. The number of firms in an industry tends to diminish in relation to the number of consumers served. Two consequences that are inimical to the advancement of productivity and wealth set in. One is that dominant firms acquire the power to control price, costs and output and the incentive to limit production in order to stabilize prices, keep profits higher than the competitive level, or both. The other consequence is exhibited in the policies of small firms and large ones alike. The large ones, with a healthy respect for each other's market power, may incline toward a policy of "live and let live." The smaller ones may seek, through limited association among themselves or through appeals to the state for protective legislation, to escape the rigors of competition from any quarter. In each case, both production and productivity may suffer.

These anti-competitive tendencies, visible in our own national experience, are not the only consequences of industrial evolution. A countervailing tendency, positively conducive to advances in productivity and wealth, originates in technology. Partly autonomous, partly generated by the spirit of capitalistic enterprise itself, it is the tendency for monopolistic positions to be destroyed soon after their emergence — if not actually to be stillborn — by qualitatively competitive pressure. I refer to new products, new materials, new techniques. Among industrial nations, the United States offers the world's most notable illustration.

It is neither my purpose nor within my power to weigh these forces, anti-competitive and competitive, against one another. It is sufficient for my argument to set before you two convictions. One is that the march of technology proceeds unevenly within our industries. Where it has moved least rapidly, self-protective measures and governmental protection have been a drag on material progress. The second is that qualitative competition among the giants is so different in character and in market results from price competition among small firms in unprotected markets that economists are literally incompetent to say at this time how nearly fully the theoretical advantages of specialization are being fulfilled. I think there is abundant warrant for saying, however, that either rigorous quality competition or rigorous price competition is necessary if output and efficiency are to be maximized. Protection and monopoly always require special justification.

The second major qualification to the proposition that a nation's wealth can be most surely increased within the framework of a free market system arises from a question concerning the definition to be given to the word, wealth. Running consistently through Western economic thought has been the theme of consumer sovereignty.

The textbooks will tell you that the glory of the competitive system is that the dollar votes of consumers determine what is to be produced, and competition among producers to satisfy consumer demand assures that what the consumers bid for will be produced by those able to produce at least cost. The advanced studies of the theory demand and the treatises in modern welfare economics do not suggest anything much different. Wealth is, by and large, what consumers consider wealth to be. If the consumer desires, among other things, a proliferation of only slightly differentiated products, then the devotion of productive resources to the elaboration of styles, qualities, and variant forms creates wealth.

Under such an economic system, it is left largely to the votes of the consumers' political representatives in the legislative bodies to see to it that forms of wealth for which there is a limited, or no, market demand nevertheless get produced. I speak of wealth in the form of trained and educated human resources, of wealth in the form of institutions of civil authority, of wealth in the form of roads, harbor works, and other public works. Nor may I omit wealth in the form of a defense establishment.

In view of these important qualifications, what may the economist say about the principles that ought to be implemented if the nation's strength is to be maximized? He can, I think, stand by the principle of specialization in production. This is the key to heightened productivity. He can stand by the principle that in a world of limited resources, it is of the unmost importance to keep exchanges free. This is the way to break through the limitations on production that are imposed by local scarcities of resources. Against the interests of protectionism he can assert the gains to be derived from risk-taking. Personal security and national security can be shown, I believe, to be much more durable in a changing world when they are based on willingness to adapt, to invent, to be flexible than when they are based on a desire to become anchored, to be fenced in, to be stalwart in opposition to change. Finally, the economist can acknowledge that the dollar test of the market should not be considered equally serviceable relations. To the principles of economics must be added the principles of ethics and sociology and politics if the nation's strength, which is a function of its own standards, is to be joined by the strengths of other nations, which are functions of their own, often different standards. And the strategist, who can not always be governed by market considerations, must always be entitled to ask the economist to translate his dollar terms into units of weight, volume, time and energy. Only then can real limits, as contrasted with market limits, be exposed.

I have been speaking within the framework of Western economic thought. The question naturally arises as to whether Western economics, or capitalist economics, is all that the strategist need take into account. In the largest sense, it is. Marxist economics was a derivative of English classical economics and differed from it mainly in being evolutionary rather than static and historical rather than abstract. Current Western economic thought has addressed itself both to dynamic change and to empiricism. If one nowadays examines the content of socialist economic doctrine or communist economic practice, he finds exemplifications of exactly those principles of specialization, market expansion, innovation, and intermingling of other-than-economic principles with the more purely economic that I have mentioned. The outward forms are, to be sure, often different. Where the discipline of the price system is enforced in capitalist economies through predominantly free markets, it is enforced in socialist economies by administrative fiat. Where the fight against restrictive scarcities is pursued in the West through more or less freely contracted exchanges, it is waged in the Soviet sphere through administrative allocation and state-controlled international barter. Where innovation in capitalist countries is fostered via the profit motive, it is fostered in controlled economies by subsidy and directive and honoraria. Where the fusing of economic considerations with political and other considerations is left in the West to the judgment of freely elected representatives, it is planned in the Soviet and in other totalitarian regimes by the self-perpetuating (and sometimes mutually-obliterating) upper levels of the political hierarchy. For the purposes of the strategist, the adjective might as well be eliminated from the phrase, capitalist economics.

You may be feeling that my level of abstraction is too high for my remarks to be meaningful. If I have committed that fault, I hope I may amend it by continuing on the abstract level for only a few additional remarks and then moving to more particularized consideration of specific economic factors that currently ought to affect strategical deliverations.

These few additional remarks of highly generalized character concern the remaining four of the five sub-tasks into which I suggested that we might divide the grand strategical problem. The first was to increase one's own strength; the second, to identify the potential aggressor; the third, to avoid strengthening him and, if possible, to weaken him; the fourth, to be prepared for a showdown; and fifth, to foster the conditions making any showdown unlikely.

Whether or not one is to believe that the economist can make any contribution toward the identification of potential enemies depends upon the importance one attaches to economic factors as causes of war. I, myself, do not find it necessary to hold that all wars are instruments of economic expansion in order to believe that economic factors may be of determinative significance. Economic unrest in a nation can predispose it to external military adventures. A sense of growing economic power within a nation can reduce its fear of the consequences of resorting to war in order to settle international differences. On such possibilities as these the economist can shed a great deal of light, and his findings might very well turn up intelligence that is not fully being taken into account in the reckonings of more politically-oriented minds. The most bellicose-sounding nation may not be the first belligerent.

To the third sub-task, that of weakening the potential aggressor, the economist can also contribute something. The contribution should lie, first, in identifying the potential opposition's most critical scarcities and, second, in suggesting the means that might effectively be employed to prevent his overcoming them by procurement from beyond his own borders.

On the fourth sub-task, that of preparing to bring one's own strength to bear most effectively against the enemy in the event of a violent showdown, economists have two distinctively different contributions to make. The first they can make in their character as pure economists; that is, as weighers, in the abstract, of alternative means to reach given ends. In advance of the occurrences of war, they are prepared to envision the economic pressures that would arise in the nation in the event that war should come. I refer to the competing pressures of consumer demand and governmental demand for scarce material resources, to the competing pressures of the military and of civilian industry for manpower, to the competing pressures of the government and of private enterprises for funds. One of the best uses that the strategist could make of the economist in the connection with fulfillment of the fourth sub-task would be to have him assigned the duty of preparing, in stand-by form, the plans that might be implemented in wartime to contain such pressures as I have cited.

The second contribution the economist can make is of a more circumstantial, though not less significant, nature. Many economists gain through their studies, intentionally or as a by-product, a close familiarity with the organization and distribution of industry, the availability of material and human resources of all kinds and qualities, and the technological, I might say mathematical, functions that relate resources, via technology, to potential output. You have heard of linear programming. This is simply an advanced development in the field of applied economics that is as relevant for calculations of military potential as it is for calculations of potential living standards.

To the fulfillment of the fifth sub-task, that of fostering the conditions under which resort to war by other nations becomes less and less likely, the economist can make something of the same sort of contribution that he can to the fulfillment of the very first, that of increasing his own nation's strength. Here, as in the case of identifying the potential aggressor, one must assume that an amelioration of economic hardships the world over would contribute to the durability of world peace. If one believes that it is not absolute levels of hardship that prepare the ground for war but rather invidious distinctions noted in the relative levels achieved by different nations, one may be pessimistic about the economist's ability to contribute. Yet if one supposes that absolute hardship may be significant, one must acknowledge that the economist can be useful. Recent advances in the theories of economic development, researches in the economic needs of underdeveloped peoples, and new understanding of the motives underlying foreign economic policies different from our own can all be brought to bear in the task of reducing international tensions. The ingenuity of economists in devising technical means of cooperation among disparate economies should not be reckoned of small account.

VI

So much for the general. It is clear that any attempts to put into effect the principles I have suggested as relevant to strategy must run squarely into the difficulties inherent in the strategical situation. No principle, even so straightforward a one as specialization, applies itself. *Choice* must be made, for example, between specializing during peacetime in the ever more efficient production of military goods and in the development of a more broadly oriented economy which might, in the test of war, be both more productive and more durable. *Interdependence* must be recognized. It would be witless to adopt measures designed to weaken a potential enemy if they were to have the inevitable effect of inviting retaliation we could not well support. *Chance* should never be absent from the most confident calculations of one's own potential strength. The exhaustion of a critical source of supply, the unexpected obsolescence of an important type of facility, the intrusion into economic calculation of an ignored sociological factor, might at any time produce surprises for which one would not be prepared. One must accordingly allow for surprises, and the best allowance is a commitment to flexibility. *Imperfect information* is the mortal lot. The best defense against it is attack, with all of the facilities of intelligence and scholarship.

But choice must be made in concrete situations, interdependence perceived in them, chance confronted in them. And the concrete situation is the one with respect to which imperfection of knowledge is always most immediately critical. How, then, may one subdivide the areas within which the economic factors affecting the concrete strategical situation are to be dealt with? I should like to suggest a framework. It parallels the five-fold series of tasks into which I divided the grand problem of strategy. I submit that the economic factors affecting strategy are to be found and dealt with within the recognized fields of: economic development, economic intelligence, economic warfare, economic mobilization, and international economic cooperation.

Let me take these five fields up one by one and attempt in each case to illustrate the linkage between economics and strategy. I shall focus on the types of economic analysis or undertakings in which the strategist might profitably take a particular interest, and I shall try to offer at least a rudimentary appraisal of the effectiveness of the types of economic measure or analysis most relevant to the strategical problem.

In referring to the field of economic development I mean to invite attention to the efforts constantly being made within all segments of industry, agriculture and commerce, and at all levels of government, to improve facilities for production, to identify and satisfy unfulfilled material needs of the population — as individuals and as members of a national collectivity — and to maintain institutional environment within which involuntary idleness is kept to a minimum and opportunities for economic advancement are kept at a maximum.

Within this field of action are undertaken private and public measures to promote economic progress, economic stability, and distributive justice or social amelioration. It is not, you may well note, a field upon which the strategist is often directly engaged. He does not participate, as a strategist, in the devising or execution of tax reforms that will stimulate industrial research and expansion, or banking improvements that will help stabilize the economy, or extensions of social security that will lighten individual economic burdens and strengthen the confidence of the people in their system and their devotion to it.

Yet successes by statesmen, businessmen and economists in this field are grist for the strategist's mill, and failures in the field exacerbate his problems. I have said enough earlier about the strategical importance of increasing the nation's strength. Let me call to mind now the damage done to the nation's security by failure to achieve progress, maintain stability, and secure economic justice.

After World War II, the rest of the world expected an American depression. There were some who eagerly counted upon it. There were neutral nations, either determined not to be drawn into the conflict of interest between free and totalitarian nations, or waiting to see with which side it would be safer to cast their lot, who were perhaps objectively interested in whether or not a serious American depression would occur. The occurrence or non-occurrence of such a depression was obviously of tremendous strategical significance. A major depression might accelerate Soviet imperialist expansion. It might induce in Western Europe a repudiation of capitalist enterprise. There and elsewhere it might imperil the foreign holdings and sources of supply of American investors and industries. It could cause a drastic re-alignment of allies and neutrals. It could break the confidence of many Americans in their own economic, political and social system.

All of this must touch the strategist in two ways. In the first place, he can't afford not to be a student of current economic developments, for he must promptly, nay, even in anticipation, take national economic failures into account in his reckoning. Secondly, he may exert more influence upon national economic policy-making than would seem apparent at first glance. Let me give one example. Military spending is an important part of total national demand for goods and services. It helps determine the level of employment and incomes. It influences their geographic and personal distribution. It can exert these influences abroad as well as at home. In the timing and distribution of such expenditures, the strategist can help his own immediate cause if, where the military situation allows flexibility, the exigencies of the economic situation are explicitly attended. I am not suggesting military pump-priming or demobilization. I am suggesting that, within the framework of a planned level of military readiness, the exact timing and distribution of expenditures might either soften or worsen the total economic condition of the nation. Accelerated fulfillment of a given plan in time of recession and lengthier distribution of spending over time in a period of boom might serve the ultimate ends of strategy far better than rigid adherence to a predetermined schedule.

Nor would I suggest that the strategist call a halt to his incursion upon the economic domain here. I would not, as a citizen, hold it amiss for the voice of the strategist to be raised at any level of government or in any public forum where matters of national economic policy are considered. If the strategist can make use of the economist, so can the economist and the economic policy-maker make use of the strategist. What embarrassments and tensions this might generate I am not disposed to guess, but I should regard them as small costs in so large an undertaking.

The effectiveness of the strategist in any such enterprise must depend, of course, upon the ultimate amenability of the economy to purposeful control. The recovery that the United States is now enjoying from the recession that began in the summer of 1953 has suggested to some observers that the recuperative powers of the American enterprise system are so great when their full play is not impeded by paternalistic governmental action that enthusiasm for governmental intervention in economic affairs can be carried to excess more easily than had been imagined. I think this is a misinterpretation of the true state of affairs, and I should be chagrined to see the strategist make it his own. The recuperative powers that the economy has shown owe much, in my view, to the improvements that we have been able to make, through governmental action, in our banking mechanisms, in our social security system, and — via taxation — in the distribution of income. Moreover, although the present Federal administration is devoted to a reduction of governmental intervention, it might be more accurately thought of as being devoted to intervention of the stimulating kind rather than intervention of the compensating kind. Economists are not yet ready to say in what combination these types may be most effectively joined. The strategist who would interest himself in economic policy-making, therefore, must plunge into this uncertainty with the economist when he studies fiscal policy and the dynamics of capitalist expansion.

In speaking of the second field within which economic factors affecting strategy may be seen and dealt with, I use the phrase "economic intelligence" in the sense of economic information concerning the resources, potentialities and intentions of other nations. Donald Bailey Marsh, the Canadian economist who wrote the excellent book entitled *World Trade and Investment*, has said that if there had been any popular understanding during World War II of the importance to the enemy of being intimately familiar with our national income statistics, some zealot would undoubetdly have demanded that those statistics be labelled 'Top Secret' and taken out of general circulation.

There is no better way to appraise the level of a nation's economic strength, changes in it over time, its likely potential at future dates, or the extent to which it is being mobilized in ways useful for the prosecution of war than by examining its statistics of national income and national product. How far has industrialization been carried? Look at the figures on capital formation. Is there a switch under way from guns to butter or butter to guns? Look at what is happening to the share of national income going to consumption goods. Is there a good deal of fat upon which its industries could draw if steel, aluminum and copper were to be diverted to military products? Look at the series for capital formation and depreciation. These are just hints. I could have developed the topic in connection with the first field, economic development, and suggested that the strategist become as familiar as possible with data on his own country. It is obvious that he can profit greatly by carrying on simultaneous and comparative study of foreign developments as revealed in the national income accounts. Where the foreign data are not easily available, they must be sought or imaginatively reconstructed from partial data. Professor Abram Bergson of Columbia has done notable work in this area. Nor can I fail to mention the skillful pedagogic device that Dr. Arthur O. Dahlberg has developed for the visual presentation of national income accounting.

Closely related to national income data are data on the industrial organization and structure of other economies. These lie behind the national income accounts. They are a dominant part of their content. But they are important for an additional reason. They expose the king-pins and the bottle-necks, the nerve centers and strong-holds in an economic system. Use what metaphor you like. If you wish to know the strengths and vulnerable points of a war-time enemy, you must have already become familiar with his economic structure.

Only slightly less important than these two sets of data are those brought together by modern nations in their balance of payments statements. These reflect their foreign trade directions and volumes and a great deal more about their economic relations with other nations. Related data on their foreign assets and indebtedness are equally relevant to a determination of the extent and character of their international influence and their international dependence and vulnerability.

By combining a study of other nations' balances of payments with a study of such exchange-control systems as they may be employing, the work of interpreting their condition and their intentions can be markedly facilitated. Hitler's trade and exchange policies vis a vis the Danubian states offers the classic example in our time of the harnessing of international economic measures to the cause of preparation for war. The current Soviet interest in an expansion of East-West trade may, I think, be differently, if not more reassuringly, interpreted. With them, I think, the propaganda aspect may be the dominant one so far as states other than satellites are concerned. For the satellites, I venture, the Hitlerian analogy holds up well.

The field of economic warfare must be divided in two. There is first, and of current significance, the economics of cold war. If we should be unsuccessful in that area, and unsuccessful in other areas of policy affecting the current world situation, we should have to be prepared for the economics of hot war.

I take it that so far as positive action, as contrasted with analysis, is concerned, there are three basic questions on which the strategist might seek the help of the economist in the matter of cold war. One, is there an effective way to deny external sources of strategic materials to the potential aggressor during peacetime? Two, can the international alignment of friendship and power be shifted increasingly in our favor by the extension to other nations of economic aid? Third, can our economic system be made to appear so attractive and reliable, and so complementary to an attractive system of political rights and liberties, as to weaken the appeal of promises made by competing economic and social systems?

In answer to the first question, I am disposed to suggest the doubt that we can gain more than we stand to lose by attempting to deny strategic materials to potential aggressors — in the contemporary case, the Soviets. I should make an exception of the atomic materials over which the American government may have the power to exercise tight control. The distinction between strategic and non-strategic materials must in any case be arbitrary and open to strategical criticism. It might also be argued that it is more important for a nation to develop its capacity to produce what it regards at any time as strategic material than to develop its capacity to produce what it regards as non-strategic material. Now, in a predominantly free market system, the development of production can not go far without the concomitant development of markets, both domestic and foreign. If our machine-tool industry, to take an example, could thrive and expand under a policy of free exportation, while it might wither or stagnate under a policy of embargo, I should say that the policy of embargo was of dubious value.

But my basic distrust of embargoes derives from another consideration. Economic strength is enhanced by the practice of specialization in production. Specialization and efficient, large-scale production, require unrestricted sources of supply and large, dependable market outlets. This is as true for others, both friends and non-friends, as for us. I should put much greater reliance upon my own ability to become strong, and to help my friends become strong, than I should in my ability to weaken those who are not my friends. And I should not feel, that if I were able to win out in a contest for strength by such means, I should be likely to win out in any other type of contest. Add to this the consideration that cigarettes for the armed forces might be just as strategic as ball bearings in some particular case, and that friends might disagree when that case appeared, and you have ample reason for questioning the desirability of attempting to impose own judgment on one's friends.

The answer I should offer to the second question may be guessed from what I have just said. I should think it utterly invalid to hold that it is not possible, through economic aid to others, to win or strengthen their tendency to link their fortunes with one's own. The desirable principle, I should think, would be to give the aid in the form of opportunities for self-development under conditions of self-determination. With that principle stated, I think it becomes unnecessary for me to go into the details of economic aid versus military aid, grants versus gifts, either versus trade concessions and trading opportunities, and technological information versus funds.

To the third question I must answer that, although I do not know, I see no wise alternative to acting as if the answer were in the affirmative. We must all, economists and strategists and others, not only nourish the values of our system but also accurately represent it to the rest of the world. Its virtues are so great that its weaknesses need not be concealed. Economists can perform the useful function of interpreting our socio-economic system, without implausibly favorable coloring, in ways that should make sense to other peoples.

There is, next, the area of hot war. It is the realm of wartime embargo, blockade, preclusive purchasing of strategic materials, surveillance of contraband, freezing of enemy alien funds, seizure of enemy alien assets and, although far from finally, strategic bombing. In some ways it might seem that this area should receive more emphasis in this lecture than I shall have given it. Yet if the work of economic intelligence is well done during time of peace, and if mutually acceptable methods of cold war have been worked out with allies before the outbreak of formal hostilities, the economics of hot warfare must be viewed as involving problems of administration and tactics rather than strategy as I have defined it. It must suffice now for me to say that in the current condition of world affairs the possibility seems substantial that the great strategical problem we must face is that of deciding when to treat a local aggression as a rather violent manifestation of cold war and when to treat it as the initial manifestation of hot war. I should venture the hope that the strategist might work with the economist in devising quickly those economic means which might serve most surely to discourage parties not involved in the local conflagration from casting their lot with the aggressor.

The fourth field in which economic factors affecting strategy loom as important is that of economic mobilization. The Navy's immediate involvement in mobilization is nowhere, I suppose, more competently described and appraised than in the almost-official study written by Robert H. Connery of *The Navy and the Industrial Mobilization in World War II.* It would be presumptious of me to attempt to go further in suggesting the strategical implications of economic mobilization. Yet there is one aspect of the problem on which I should like to touch. We hear much these days about the necessity of protecting this or that industry from foreign competition in order that we may preserve strategical skills that we should badly need in wartime. I believe that the strategist has a responsibility to the rest of the community that he has not particularly well discharged. It is his responsibility to stand ready, on the basis of careful and continuing study, to report to the civilian officers of government his own best judgement as to what skills and facilities are in fact indispensable to the national security. It should then be the task of the statesman and the economist to devise means of guaranteeing that aspect of security without jeopardizing the interests of citizens outside the industry seeking protection by tariff and without jeopardizing the nation's economic relations with friendly countries. I do not ask this as a citizen whose pocketbook has been hit by high tariffs, but as one who has the same interests as the strategist in the nation's ability to attain the highest level of strength within its capacity. I believe, moreover, that the economist should have no reason to fail in such an assignment.

Of the many other aspects of mobilization let me say but one word. The strategist may be inclined to focus on plans for industrial procurement and only upon those aspects of manpower utilization, price control, wage control and profits renegotiation that affect military procurement most directly. This is too limited a focus, surely. The effective harnessing of the nation's strength in time of war requires the utmost cooperation among the directors of the armed forces and the directors of the civilian economy. The strategist must naturally feel under an obligation to avoid suggesting policies for the armed forces that would impede the administration of policies of apparently more immediate concern to others. More than this, however, he should feel entitled to concern himself with the effectiveness of all plans for economic control, direction, and stimulation, even within the recondite field of money and credit. It should be to his interest to urge within all of the agencies of decision-making open to him that plans should go forward in time of peace which would, in time of war, be instantly available for the successful administration of all segments of the economy.

There is, finally, the fifth field. It is that of international economic cooperation. If I have done the rest of my job even passably well, it must be unnecessary for me to suggest the range of the strategist's legitimate interest in this field. Of course he must be concerned to know how his own nation might most effectively contribute to efforts being made by each friendly nation to build a firm mobilization base. This is typical of the narrowly military aspect of the strategical problem. He can call upon the economist for useful consultation, especially with respect to the non-military facilities and manpower training needed to support a continuing arms program or a speedy military mobilization.

Beyond this, I should like to suggest most urgently, the strategist should feel strongly impelled to go. It is not only that the work of economic development at home can not be carried on most profitably in a vacuum, nor that the work of gathering economic intelligence can be advanced by enlisting the cooperation of others, nor even that the tasks of economic warfare can be heightened in effectiveness through mutually supporting efforts. It is that the grand task of fostering the conditions under which resort to war by any potential aggressor becomes less and less profitable and less and less likely can only be accomplished through understanding discussion, negotiation, assistance to and work with other nations. The strategist can not look to the economist alone for assistance. Nor can the strategist become the Renaissance man, mastering every feature of the task himself. He has to become an entrepreneur among the experts, drawing upon the particular knowledge and understanding of sociologists, political scientists, moral leaders and economists. The economist may be informed of the constructive possibilities opened up by the International Bank for Reconstruction and Development, by the International Monetary Fund, by the Economic and Social Council of the United Nations, by private foreign investment and by Point Four. But he knows less than the sociologist and the others about the ways in which different peoples may respond to the offerings of these agencies. The sociologist may be ready to anticipate the responses without being prepared to weigh the material needs of one area against those of another, or without being prepared to devise new technical means of meeting the social needs he is trained to perceive. The strategist can not rely, in short, on any one group of students and observers. But he is in a peculiarly advantageous position to stimulate them to undertake joint enterprises. If he should be supremely successful, he would do himself out of a job, of course. This would be an irony that he would appreciate not less than would the others. But if he should fail to incite them to efforts great enough to produce success, there would be few of those who might remain who would have any stomach for the task of distributing the blame.

I have reached the end. I am sensitive of not having given you as precise an account of the economist's limitations as I should have liked to. You are at least aware of my own. If, in addition, I have been able to convey, as I have hoped to, a sense of the sort of approach a general economist finds it natural to make to a new subject, I shall not feel too guilty about having accepted your kind invitation.

BIOGRAPHIC SKETCH

Professor Donald O'Connell

Professor O'Connell was born in New York on 22 March 1916. He attended Columbia University and holds B.A., M.A., and Ph.D. degrees from that institution. In 1938-39 he studied at Cambridge University on the Kellett Travelling Fellowship.

His teaching career was begun at Columbia College prior to World War II, but was interrupted by active duty in the U. S. Naval Reserve from 1942-45. Professor O'Connell resumed his teaching at Columbia in 1946. He has taught in the fields of economic analysis, industrial organization and market structure, and contemporary economic and sociological problems. He has also contributed to four of the textbooks used in courses on Contemporary Civilization in the last named field. His own research has been in the field of monetary institutions and theory. In July 1954 Professor O'Connell became Assistant Dean of the Graduate School of Business at Columbia University.

In addition to his teaching, he has served as contributing editorial writer for the New York Herald Tribune since 1949, covering national economic legislation, domestic economic developments, and international economic affairs.