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"WHATEVER HAPPENED TO THE RESOURCE WAR?"

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"Whatever Happened to the Resource War?"

One of the most remarkable vanishing acts since that of Judge Crater has taken place in the past few years: what many in the U.S.--including not a few in the first Reagan administration--were a short time ago regularly referring to as the "Resource War" has simply disappeared. Not even the current tense situation in South Africa, fraught as it is with potential menace to the supply of a few highly essential minerals to the U.S. and its NATO allies, seems to be able to evoke the kind of worry and rhetoric that featured in so much of the debate over resource diplomacy that took place only a half-dozen years ago.[1]

When candidate Ronald Reagan spoke in the ominous tones of the "resource war" during the 1980 presidential campaign, he never lacked for an attentive audience; today, President Reagan takes methodical aim at the National Defense Stockpile--long the sacred cow for preparedness advocates--with the view to depleting some of its mineral holdings in order to raise revenue, and few outside of Congress seem to notice or care.[2]

In its heyday, the "resource war" was widely seen to consist in a two-pronged, and dual-motive, Soviet effort to interfere with the West's supply of essential minerals. Prong one was the oil supply of the Persian Gulf; prong two the hard-rock minerals of southern Africa, a region it became fashionable to regard as the "Persian Gulf" of nonfuel minerals. The motives were as clear as the methods. The first was the crippling of Western military potential, and thus military prowess, by an interdiction of the supply of those minerals most needed by Western industrial economies. This was argued to be a credible avenue to world supremacy for the Soviets, one that would avoid the perils of a direct military confrontation with the West (although why acts of blatant

economic warfare should have been held to be relatively risk-free was never adequately explained by the resource-war theorists).

The second motive--and this was an argument pursued by many who read geopolitical significance into recent short-term shifts in patterns of Soviet mineral trade--was linked to an assumption that raw-material depletion stalked even the mightily endowed Soviet Union, and that faced with scarce supplies of industrial minerals and equally scarce amounts of foreign exchange, the Soviets would simply have to rely on military force to secure access to resources.[3] Though most often invoked to account for Soviet policy in the Persian Gulf, and secondarily in southern Africa, the resource war could and did serve as a handy device for plumbing the materialist depths of other aspects of Soviet foreign policy, such as the invasion of Afghanistan.[4]

Although scarcely credible today, statements such as the following had a certain plausibility at the start of this decade: "The United States and its Free World allies are in an undeclared and, so far, bloodless 'resource war' with the Soviet Union--and are in grave danger of losing that war."[5] The situation, being parlous, called for quick action, and among the necessary corrective measures were an arms build-up (especially the expansion of the U.S. Navy, so vitally needed to guard far-flung "sea lines of communications," or SLOCs as they came to be called); the abandonment of détente, the sooner the better; and the construction of a newer and closer relationship with the Republic of South Africa, heralded by many resource warriors as constituting nothing less than the bulwark of the material base of Western civilization. "If South Africa is lost to the West," warned one proponent of the resource war, "the next step aimed at achieving the Soviet goal of global domination could be a disruption of oil supplies to the West, attempts at Marxist takeovers in Chile, Peru, and Brazil,

and the promotion of labour unrest through Communist-dominated labour unions in Australia."[6]

Seldom has the right assimilated more thoroughly the teachings of left-wing foreign-policy analysts than during the height of the resource war. What Lenin had instructed an earlier generation of students of foreign-policy behaviour, and what more recent "revisionist" analysts such as Harry Magdoff and Michael Tanzer have reiterated--namely that capitalist economies were impelled toward imperialism and globalism in some important measure because of their need to secure access to raw materials--was now being trumpeted, mutatis mutandis, by conservative exponents of the resource war.[7] Lose access to the vital industrial minerals, they cautioned, and the West will lose economic and ultimately military power vis-à-vis the Soviet Union, just as certainly as if it had been bested in military struggle.

Ordinarily, one would not be terribly surprised to encounter diminishing audiences for economic determinism of the sort displayed by the resource-war theorists. After all, Marxian and other radical revisionists have not had an easy time gaining widespread acceptance in U.S. foreign-policy circles. But while the policy relevance of radical revisionism might today remain minimal, what is surprising when one contemplates the fate of the resource-war perspective is that it has foundered in seas decidedly calmer, from an ideological point of view, than those in which radical theoretical vessels have come to ruin.

To say that Harry Magdoff is not a conceptual and analytical guru in Ronald Reagan's Washington comes as close to being a truism as it is possible to imagine. But that Daniel Fine, James Miller, and company are singularly bereft of congenial auditors in contemporary, "neo-conservative," America really does take some explaining. What, we wonder, has happened to the resource war?

In what follows, we shall argue that, ironically, the resource war has been handicapped by ideological congeniality almost as much as the economic determinism of the left has consistently been hobbled by ideological adversity. We further argue that in addition to being made redundant in an ideological sense, the resource war has been rendered less worrisome--hence less credible--by changing realities in the international political economy of raw materials, especially in the context of the "North-South" struggle that so disturbed analysts and policy makers alike in the United States of the early to mid 1970s. And, for good measure, we conclude that the resource-war perspective has become contaminated by its unavoidable association with the supporters of the South African regime, in somewhat the same way that geopolitics was rendered noisome for an entire postwar generation because of its association with the Haushoferite Geopolitik school of analysis that so dominated international-relations scholarship in Nazi Germany.

Détente and the Resource War

One of the most important, if maddening, questions confronted by those who try to understand and explain foreign policy is the relative power of "ideology" versus "interests" as motivating forces in statecraft.[8] We will not attempt to resolve the conundrum here, for it strikes us as the sort of puzzle that will generate confusion for some time to come, but we do introduce it to make a point: that the opponents of détente seized upon the presumed (and presumably justifiable) need to defend material interests as a primary explanation for and focus of their extreme disquiet with détente. Although no doubt some true-believers among the resource-war school probably did ground their opposition to détente entirely or largely in terms of an assessment of American

material interests, it is difficult to escape the conclusion that for many resource-warriors of the late 1970s the spectre of raw-material conflict was a heaven-sent way of demonstrating the folly of what they took to be a misguided, immoral, and ideologically unsound policy toward the USSR.

The linkage between an ideological aversion to détente and a heightened concern for American mineral supply was initially made in the mid 1970s, following the decade's first oil shock.[9] It was not long before disturbing parallels were being drawn between U.S. setbacks in the Persian Gulf and Soviet/Cuban gains in southern Africa; and after Congress rebuffed the Ford administration's attempt to arrange military assistance for the FNLA and UNITA, on the basis of there being no "vital" U.S. interests at stake in Angola, anti-détente advocacy quickly became embedded in an interest-based calculation of risk and gain. With the Vietnam experience so recent, it is hardly surprising that this should have been the case.

Nor was it surprising that once détente succumbed to an administration and a country increasingly in tune with righteous principle, and not just material interest as a lodestar for foreign-policy makers, the resource war should fade into the background. To be sure, its demise was not entirely owing to the fact that it was now redundant to those who sought to dismantle détente; but it was, nevertheless, an important early casualty of the new mood of reassertionism in U.S. foreign policy. In this regard, the fate of the resource war reminds us of Mark Hannah's comparative observation on platforms--those in train stations and those in political campaigns--as constructions that, though extremely helpful in helping one get into something, were best left behind as quickly as possible.

Consider the manner in which the resource-war thesis, for example, served the interests of the naval expansionists, for whom nothing short of a 600-ship

Navy could guarantee the security of the United States, and protect its global interests. Whereas in the late 1970s and during the 1980 campaign those interests were often expressed in a material context related to the SLOCs, today much less is heard of the need to defend the "lifelines" stretching out of the Persian Gulf and rounding the Cape of Good Hope. As the Navy inches inexorably toward its 600-ship goal, the justification for expansion is now to be found in the struggle against terrorism and--though this is exceedingly controversial--in the bold "forward strategy" through which former Navy Secretary John F. Lehman, Jr., would, in the event of a war with the USSR, have brought American carriers and planes into striking distance of Soviet naval and air bases.[10]

But if shifting ideological preferences have played a part in undermining the plausibility of the resource-war thesis, it must not be thought that this perspective was abandoned solely because of subjective considerations. In reality, profound changes in the international political economy of raw materials have also contributed greatly to the declining credibility of the resource war. We refer in particular to those changes that have affected the supply/demand balance for most minerals over the past decade.

The Rise and Fall of "Commodity Power"

The decade of the 1970s, in dramatic contrast to the current situation, witnessed growing concern in the West that Third World mineral suppliers would cooperate with each other in a sustained effort to extract huge price increases from import-dependent industrialized states. The Arab oil embargo of late 1973 was, of course, a major factor underlying this view. However, even before the embargo, fears were already surfacing about the adequacy of the world's

mineral resource base. The bleak scenarios outlined by the Club of Rome and other neo-Malthusian groups in the early 1970s helped to fuel these fears, which were given apparent confirmation by the sharp run-up in global commodity prices during the period.

These developments, coupled with OPEC's spectacular successes in 1973-74, prompted a number of analysts, as well as several Western governments, to focus on the growing "commodity power" of the Third World as a whole. Lists of nonfuel mineral commodities thought to be susceptible to cartelization were compiled, and some observers argued the case for a broad political accommodation with the South, in order for Western countries to assure themselves of future supplies of essential raw materials.[11] A number of developments in the first half of the 1970s appeared to lend credence to the judgement that more OPECs would come into existence in a variety of commodities. Third World bauxite producers established a producers' group in 1974 (the International Bauxite Association), several of whose members instituted radically higher taxes and levies on the multinational firms active in the industry, as well as proceeded to nationalize some of their mines. Third World exporters of copper, under the auspices of their association (CIPEC), introduced supply restrictions in 1974-75 in an effort to support prices. Meanwhile, the price of phosphate almost quadrupled, benefitting Morocco and other developing country suppliers and causing a marked increase in fertilizer prices. In addition, intensive discussions were held by Third World iron-ore producers about the possibility of using the Association of Iron Ore Exporting Countries (AIOEC) to control the international market for that important, indeed "basal," commodity. These certainly appeared to be inauspicious developments from the perspective of industrialized mineral-importing countries.

In retrospect, however, it seems amazing that Western fears of Third World commodity power could gain such a respectable hearing. We now know what should have been more apparent at the time, that several stringent conditions have to be met before commodity producers can exercise sufficient market power to greatly increase their returns from resource exploitation. Among these necessary conditions are:

a) Demand for the commodity must be price inelastic, the more so the better; in practical terms, this means that a mineral should not have close substitutes and should be an essential input into industry.

b) Cartel or producer association members collectively must control the bulk of production, although it is impossible to say precisely how extensive their control must be in any given case.

c) A small number of producers should dominate the export market; the larger the number of major producers, the more difficult will it be to coordinate policy.

d) Supply outside the control of cartel members must be relatively high-cost and price-inelastic; otherwise, non-members can undermine a cartel by bringing forth new output in response to the higher prices engineered by the policy in the first place. The more elastic is non-cartel supply, the more quickly will the benefits of collusion be eroded.

e) Producers should exhibit a degree of political comity and be able to fashion a common conception of their goals and interests.

These and other factors relevant to the creation and operation of commodity cartels have been the subject of extensive analysis by economists.[12] With the benefit of hindsight, it is apparent that oil in the 1970s was an

exceptional case, in that it satisfied all the criteria for producer market control. And even in respect of oil, some economists adhered to the conventional analysis of cartels, which holds them to be inherently unstable and virtually certain to break down after a short time, and argued as early as the mid 1970s that OPEC would soon be beset with conflicts and begin to unravel.[13] From the perspective of the mid 1980s, such a prognosis appears nothing short of prescient. Although the oil cartel has withstood many pressures and did operate quite effectively for more than a decade, the growth of non-cartel oil supplies, significant conservation efforts, and greater reliance on other energy sources have combined to undermine OPEC's market power.

For present purposes, what is particularly noteworthy is how the threat of other Third World mineral cartels never was borne out by real-world developments. The conditions that must be met to establish a successful cartel were not satisfied in the case of these Western mineral imports mainly supplied by LDCs. Third World cartels for such raw materials as phosphate, nickel and iron ore are implausible given the important role of developed country exporters. Third World copper exporters account for a major share of world exports of this key commodity (65 percent), but this is insufficient to allow them to control the market without the cooperation of non-LDC suppliers. Copper also suffers from the increasing availability of substitutes in its major uses.

Of the major traded non-fuel minerals, only in the cases of bauxite and tin do developing countries thoroughly dominate the export side of the market. However, in the former case, even that dominance is declining because of the appearance of Australia as a major exporter of bauxite and alumina. Moreover, the ability of bauxite suppliers to engineer substantially higher prices is

constrained by the fact that the earth's crust contains virtually limitless quantities of non-bauxite alumina-bearing substances that could be exploited if bauxite prices were driven too high. With respect to tin, while a small number of developing countries do dominate the world export market, the commodity is no longer essential to Western industries, and the producers have found it exceptionally difficult to coordinate their production and marketing activities to permit them to exercise meaningful market control. The recent collapse of international tin prices testifies to their inability to dictate market trends.

The worries frequently voiced in the 1970s about Third World commodity power have disappeared in the 1980s. The prices of mineral commodities mainly exported by LDCs have fallen since 1980, in some cases drastically so, and supplies are plentiful. It is widely believed that what is now occurring in many international resource markets is not a cyclical downturn in demand and prices, but rather a fundamental change in the structure of demand and supply. This so-called "structural change" is largely attributable to such factors as technological innovations that have led to the emergence of new industrial materials (e.g. ceramics) to supplant traditional natural materials, and that have reduced the need for many mineral products in modern manufacturing. At the same time, the severe debt problems confronting a large number of LDCs, and the discovery of substantial new reserves of nonfuel minerals in such countries as Brazil and China, further becloud the prospects for many LDC suppliers of mineral commodities. Given these developments, it is not surprising that the anxiety once felt in the industrialized world about continued access to reasonably priced Third World minerals is scarcely in evidence today. Nor is it at all odd that analysts--academic or otherwise--have "moved up the learning curve" insofar as appreciation of the meaning of interdependence is concerned.

Only a few years ago, some students of international politics were speculating that impending resource shortages would touch off severe interstate rivalries, perhaps on the scale of those that led to World War I. More recently, these very same analysts urge against hastiness in inferring, from a condition of dependence, a situation of vulnerability with all its attendant dangers.[14]

The distinction between dependence and vulnerability, we argue, is crucial;[15] and, as we shall presently see when discussing the case of South Africa, there are measures far short of waging resource war (or buttressing apartheid) that the U.S. can take, and is taking, in an effort to reduce its vulnerability to supply disruptions of essential minerals coming from southern Africa.

The Case of South Africa

The last important factor we hold to be in part responsible for the demise of the resource war is the contemporary situation in South Africa. Over the past few years it has become extremely difficult, if not impossible, for responsible American politicians to take a position on the apartheid regime that is anything but one of official, sharp, and rhetorical opposition. Clearly, the operative element in the last sentence may well be the adjective "rhetorical"; equally clearly, and this is true no matter what one thinks of "constructive engagement" or other evolutionary approaches to South Africa, no U.S. administration, least of all the current one, can afford to give Pretoria the kind of strong support that, at the height of the resource war, was seen by some concerned analysts as being indispensable for the maintenance of U.S. mineral supply.

During this earlier period, it was common for resource warriors to speak of southern Africa as the problematical region, one that in many ways was similar to the Persian Gulf, in the sense of being both mineral-rich and politically volatile; it was what geopoliticians would refer to as a classic "gray area" in international politics. During the late 1970s, those who worried about nonfuel minerals tended to focus on countries such as Zaire, with its cobalt, and though this mineral occasioned an important scare in 1978, it was some of solace to the resource warriors to know that the "cause" of our cobalt difficulties was ultimately the source of all that was wrong with the world, the Soviet Union (and its Cuban ally).[16] Today, in the case of South Africa, we lack the comfort of having a clearly identifiable, and nasty, foe at hand, and this has diffused as well as defused the resource-war gravamen.

One logical implication of the current South Africa situation might seem to be--and a half-dozen years or so ago it was seen to be by the resource-warriors--a determined effort by Western states to defend their raw-material base. But the resource war has not been able to withstand the change in its theatre of operation, for what the shift from southern Africa to South Africa has done is expose the moral dilemma that confronts states with an interest in protecting material interests. The odious nature of the current South African regime renders it simply impossible for even its least-hostile Western critics, the UK and the United States, to give so much as the appearance of buttressing the status quo for the sake of defending their material interests. Instead of finding its mineral customers rallying, however grudgingly, behind it in its struggle for survival, Pretoria witnesses some of its trading partners exploring alternative sources of supply for those raw materials whose production and reserves South Africa dominates.

Thus, when President P.W. Botha publicly reminds Western states how vitally dependent they are, for example, on the Republic's chromite, the effect of the reminder is precisely the opposite of that intended. Rather than cow them, such not-so-veiled threats to withhold supply impel Botha's Western critics to continue doing what the more astute among them have in any event been doing for some years, namely reducing their vulnerability to disruption in mineral supply coming from South Africa.

Reducing Vulnerability vs. Securing Access

In discussing the disappearance of the resource war, we do not wish to minimize the importance of mineral supply to industrialized, import-dependent countries such as the U.S. Far from minimizing its importance, we believe that achieving assured supply is and should be a national priority, not only for the U.S., but for other Western states as well. This explains the irony we implied in our introduction to this article, when we noted the odd conjuncture of events constituted by the demise of the resource war, on the one hand, and the potential collapse of the South African regime, with all that this might entail for global mineral supply, on the other.

What we have stressed is that the resource war died a death that was logical, if not natural; it simply lost whatever limited credibility it might once have had. In these remaining pages, we seek to place the current Western pattern of reliance on South African mineral supply into perspective. It seems to us that those who imagine the West must be led into backing South Africa on the basis of mineral considerations commit the analytical fallacy of confusing dependence--even near-total dependence--with vulnerability. There is no need to dispute the obvious fact that, today, South Africa accounts for an impressive

share of world production of certain vital industrial minerals; furthermore, it similarly possesses a significant proportion of global reserves of these same commodities. Taking just the most "problematical" of the strategic nonfuel minerals, it can be seen that South Africa produced in 1984 roughly the following percentage shares of world output of: chromite, 32; manganese, 13; platinum group metals, 41; and vanadium, 40. Not only is South Africa the leading producer of each of these minerals, it also has the following percentage shares of world reserves of: chromite, 84; manganese, 71; platinum group metals, 81; and vanadium, 47.[17]

While the West might legitimately be said to have a high collective dependence upon South Africa for the above minerals (and the reason they are considered "problematical" is precisely because of the source of supply), it by no means follows that the West is in any sense hostage to South Africa. Let us consider briefly under what circumstances, and with what impact, the U.S. and its allies might conceivably be denied access to mineral raw materials currently supplied in significant measure by South Africa. Two sources of disruption can be identified. First, deliberate embargoes or curtailments in the supply of particular commodities could be instituted. This of course is what proponents of the resource war had in mind several years ago when they discussed the prospect that South Africa, after having fallen under communist control, might collaborate with the Soviets to cut off shipments of vital raw materials sold to the Western democracies. More recently, the deliberate-curtailment scenario has taken substance in the discussion over the likelihood and impact of sanctions (and as in the case of Botha's above-mentioned threat, counter-sanctions).

Disruption of mineral supplies could also result simply from increased political instability and turmoil in South Africa. This scenario is at least as

plausible as the one involving deliberate decisions to discontinue exports of minerals to the West. It now looks as if the future will bring a much greater incidence of sabotage against industrial, military and other targets that symbolize the exclusive power and privilege of the minority white regime in South Africa. Nor can the prospect of further conflict between the Republic and contiguous black states be ruled out, although unsupported by determined external allies the latter would appear to be no match for the recently much strengthened South African security forces. Attacks on the transportation infrastructure, power plants, factories and mining and processing facilities could well occur if the situation in South Africa continues to deteriorate. And this could lead to at least partial or temporary interruptions in mineral production and exports from the region.

Supply disruption resulting from political instability would be much easier for the United States and other mineral importing countries to deal with than the exponents of the resource war had imagined, although not all Western countries obviously have the same immunity to supply disruption. Nevertheless, clearly there are means available to the West that would enable it to mitigate its vulnerability with regard to nonfuel minerals that originate in South Africa. In fact, some Western countries have been pursuing such means over the past few years, not because they have been contemplating the application of sanctions against South Africa, but because they have been growing aware of the imprudence of becoming too dependent upon minerals from politically unstable regions; and few regions appear to be as unstable today as does southern Africa.

We shall briefly review the major categories of options available to states seeking to reduce their vulnerability to mineral-supply disruptions. Not all

Western countries will be able to follow each of these paths to the same degree, for reasons that will be apparent. The first option can be labelled the stockpile option.[18] This approach has its adherents, as well as its detractors. Among the former are the United States, France, and Japan; among the latter are Germany, Britain (though it recently flirted with stockpiling), and Canada. No country comes close to matching the ambitious (and expensive) stockpile of the United States, and though that stockpile has in recent months been the target of administration attempts to partially dismantle it, it is noteworthy that few give the budget-minded reformers much chance of implementing major changes in the holdings.

A second option is the domestic production option. Obviously, continent-sized countries like the United States and Canada have much greater potential to supply their own mineral needs than do smaller states like Germany. Interestingly, the United States is currently investigating the prospects of developing its domestic resources of chromite, cobalt, and the platinum group minerals.[19] Canada, for its part, is a net exporter of cobalt and the platinum group metals, but is totally dependent on imports for chromite, manganese, and vanadium. There are resources of all three in Canada, and plans have recently been announced for the estblishment of a plant that would produce vanadium as a byproduct of oil-sands exploitation in Alberta.

A third, and more attractive option for those states that are not well-endowed with mineral resources, is the import diversification option. This entails the development of new sources of supply through the stimulation of exploration and development in areas where certain minerals are either not now being produced, or not being produced in great quantities. The pattern of the past few decades, with regard to both oil and the nonfuel minerals (with nickel

perhaps the archetypal case), is that the production of minerals tends to diffuse from areas of original exploitation to other countries and regions. In other words, there has been a tendency of mineral production to proliferate over time. Assuming the continuation of this tendency, there is no reason to expect that markets would not adjust to the withdrawal of those minerals currently originating in South Africa. In the past three years, for example, Brazil has nearly doubled its manganese output, and there is little reason to expect it to be unable to increase production in the event of supply disruptions (and attendant price rises) associated with political developments in South Africa.[20]

Finally, there are the options of substitution (as when molybdenum takes the place of vanadium in certain application) and conservation (which involves using less of the same material to attain the same end or value). Technologies either exist or are in the process of development that would enable (albeit at some cost) consumers to make do with much less of many of the nonfuel minerals they are currently acquiring from South Africa. There is enormous potential, for instance, for the U.S. and other countries to recycle the platinum group metals (PGM) contained in catalytic converters of scrapped automobiles--a source that a recent Congressional study aptly labelled "a very large 'above-the-ground mine' of PGM."[21]

This review of options has really been a bare sketch, and is not intended to be an endorsement of the reorientation of world mineral trade. It is simply intended to illustrate our contention that means exist for Western countries to mitigate whatever vulnerability they currently may have to supply disruptions of minerals shipped to them from South Africa.

In conclusion, we wish to stress that the fundamental flaw in the resource-war approach to mineral supply is that it relied on high-cost, risky,

and ethically suspect remedies that would, at best, treat the symptom and not the problem. The West's experience with oil during the 1970s is of great relevance here. Policy responses to the decade's oil shocks were often debated as if the sole issue was one of securing access, and not of reducing vulnerability. In a sense the intended effect of doing either can be similar, in that one does away with a problem one would rather not have, namely a shortage of petroleum products. But the policy implications--and this is what the resource warriors failed to address--of securing access seem to us to be profoundly more troubling than those of reducing vulnerability.

Access to oil, it was thought by many a decade or so ago, could be "secured," depending on one's bent, by force or diplomacy. Those who preferred the coercive route premised their reasoning on a calculation of the high costs of inaction, coupled with an underestimation of the risks of intervention. Theirs was really an argument of necessity: we needed the oil, and we really had no alternative. Those, on the other hand, who were appalled at the moral and military implications of forcible intervention, had what they thought to be a more ethical and workable solution, producer/consumer "dialogue."

We now know that dialogue, especially in the 1973/74 situation, primarily meant that consumers would modify their Israeli policies, with the view to mollifying their oil suppliers in the Arab world. The record of countries that did try the "diplomatic" approach does little to inspire confidence in dialogue as a means to secure anything but loss of face. We similarly know that force was not needed to secure access. The lesson we ought to derive from the experience with oil is that what worked in this instance was that consuming states took measures, individually and collectively, designed to reduce their vulnerability to

supply disruption. And this is what we have in mind in criticizing the resource-war perspective for not treating the problem, but only its symptoms.

Notes

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[1]For an analysis of U.S. import dependence upon South African chromium, and other minerals, see the report prepared by the director of the Bureau of Mines, Robert C. Horton, "South Africa and Critical Materials," A Report Prepared for the Subcommittee on Transportation, Aviation and Materials, House Committee on Science and Technology (Washington: U.S. Department of the Interior, Bureau of Mines, March 1986). Also see David K. Shipler, "U.S. Morals and South Africa's Metals," New York Times, 15 February 1987, p. E.2.

[2]U.S. Federal Emergency Management Agency, Stockpile Report to the Congress: April - September 1985 (Washington, December 1985). Also see Alfred R. Greenwood, "The Reagan Administration Proposes Dramatic Changes to National Defense Stockpile Goals," 86-578 ENR (Washington: Library of Congress, Congressional Research Service, February 1986); and Idem, "National Defense Stockpile Policy--The Congressional Debate," 86-863 ENR (Washington: Library of Congress, Congressional Research Service, August 1986).

[3]See especially The Resource War in 3-D--Dependency, Diplomacy, Defense, ed. James Arnold Miller, Daniel Fine, and R. Daniel McMichael (Pittsburgh: World Affairs Council of Pittsburgh, 1980); and National Strategy Information Center, The Resource War and the U.S. Business Community: The Case for a Council on Economics and National Security (Washington: Council on Economics and National Security, 1980). Also see John R. Thomas, "Soviet Global Policy and Raw Materials," in Strategic Minerals and International Security, ed. Uri Ra'anan and Charles M. Perry (Washington: Pergamon-Brassey's, 1985), pp. 75-82.

[4]See John F. Shroder, Jr., "The U.S.S.R. and Afghanistan Mineral Resources," in International Minerals: A National Perspective, ed. Allen F. Agnew (Boulder, Colo.: Westview Press, 1983), pp. 115-53.

[5]Warren P. Baker, "Next: A Resource War?" Seapower 23 (October 1980):55.

[6]W.C.J. van Rensburg, "Political Change in South Africa and the Importance of the Republic of South Africa as a Raw Material Supplier," in Probleme der Rohstoffsicherung (Bonn: Friedrich Ebert Stiftung, 1981), p. 99.

[7]The radical revisionist case is argued by Harry Magdoff, The Age of Imperialism: The Economics of U.S.Foreign Policy (New York: Monthly Review Press, 1969); and Michael Tanzer, The Race for Resources: Continuing Struggles

over Minerals and Fuels (New York: Monthly Review Press, 1980). An interesting discussion of certain theoretical affinities between left- and right-wing analyses is Ole R. Holsti, "The Study of International Politics Makes Strange Bedfellows: Theories of the Radical Right and the Radical Left," American Political Science Review 66 (March 1974):217-42.

[8]The greater relative importance of interests is stressed by Werner Levi, "Ideology, Interests, and Foreign Policy," International Studies Quarterly 14 (March 1970):1-31. But for a different assessment, cf. Stephen D. Krasner, Defending the National Interest: Raw Materials Investments and U.S. Foreign Policy (Princeton: Princeton University Press, 1978).

[9]See, for example, Edward Friedland, Paul Seabury, and Aaron Wildavsky, The Great Détente Disaster: Oil and the Decline of American Foreign Policy (New York: Basic Books, 1975).

[10]Michael R. Gordon, "Lehman's Navy Riding High, but Critics Question Its Strategy and Rapid Growth," National Journal, 21 September 1985; Bill Keller, "The Navy's Brash Leader," New York Times Magazine, 15 December 1985; Anthony H. Cordesman, "The 600-Ship Navy: What Is It? Do We Need It? Can We Get It?," Armed Forces Journal (April 1984).

[11]C. Fred Bergsten, "The Threat from the Third World," Foreign Policy, no. 11 (Summer 1973); Zuhayr Mikdashi, The International Politics of Natural Resources (Ithaca, N.Y.: Cornell University Press, 1976); and P. Connelly and R. Perlman, The Politics of Scarcity (London: Oxford University Press, 1975).

[12]Raymond F. Mikesell, New Patterns of World Mineral Development (Washington: British-North American Committee, 1979), pp. 6-15; John F. Tilton, The Future of Non-Fuel Minerals (Washington: Brookings Institution, 1977); F.M. Scherer, Industrial Market Structure and Economic Performance (Chicago: Rand-McNally, 1980).

[13]M.A. Adelman, "Is the Oil Shortage Real?" Foreign Policy, no. 9 (Winter 1972-73); Robert Aliber, "The Impending Breakdown of the OPEC Cartel," Wall Street Journal, 20 March 1975.

[14]See two articles by Bruce Russett, which neatly demonstrate this learning curve: "Security and the Resources Scramble: Will 1984 Be Like 1914?," International Affairs 58 (Winter 1981/82):42-58; and "Dimensions of Resource Dependence: Some Elements of Rigor in Concept and Policy Analysis," International Organization 38 (Summer 1984).

[15]Cf. the distinction between "sensitivity" and "vulnerability interdependence" made in Robert O. Keohane and Joseph S. Nye, Power and Interdependence: World Politics in Transition (Boston: Little, Brown, 1977), pp. 11-19.

[16]For an analysis of the Shaba incident of 1978 and its aftermath see Barry M. Blechman, National Security and Strategic Minerals: An Analysis of U.S. Dependence on Foreign Sources of Cobalt, Westview Special Studies in National Security and Defense Policy (Boulder, Colo.: Westview Press, 1985).

[17]U.S. Bureau of Mines, Mineral Commodity Summaries 1986 (Washington: Department of the Interior, 1986).

[18]See Amos A. Jordan and Robert A. Kilmarx, Strategic Mineral Dependence: The Stockpile Dilemma, Washington Papers, vol. 7 (Beverly Hills: Sage, 1979).

[19]U.S. Congress, Office of Technology Assessment, Strategic Materials: Technologies to Reduce U.S. Import Vulnerability (Washington: U.S. Government Printing Office, May 1985).

[20]"Ferro-Alloys Sector Surging Ahead," Latin America Commodities Report, 4 September 1986, p. 2.

[21]U.S. Congress, Strategic Materials, p. 239.