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Early in the movie version of *Lawrence of Arabia*, an Arab chieftain shoots and kills Lawrence's young guide because he had dared to drink water from a well that belonged to a different tribe. There is nothing inappropriate in that scene.

For most of recorded history, conflict in the Middle East has had more to do with water than with land, much less oil. None of the main rivers in the region belongs exclusively to a single nation, and the need to share water has challenged each civilization, each government.

Today, the situation is even worse as almost every country in the region is experiencing alarming growth in demand for water and is "mining" available supplies. That is, they are using more water than arrives annually in rainfall or river flows so that water tables are dropping and springs are drying up.

Nowhere in the Middle East is the conflict over water sharper than in the Jordan River basin shared largely by Israel, the Occupied Territories, and Jordan — with Lebanon and Syria each having a smaller part of the basin. Indeed, some people argue that the next war in the region will be over access to water. A former Israeli water commissioner has called the water issue a "time bomb" that, in the absence of resolution, will demolish any arrangements with regard to Israeli-Palestinian peace.

Compared with many parts of the Middle East, water should be an easier issue in Israel. The problem is not so much one of availability as it is of regional and seasonal variability. Annual precipitation ranges from 1000 mm (nearly 40 inches) per year in the North to perhaps 50 mm (less than 2 inches) in the South.

Moreover, rainfall is highest in the winter, but usage is highest in the summer, mainly because of irrigation, but increasingly for urban uses as well. (Thus, traditional daily prayers ask for rain in the winter but realistically settle for dew in the summer.)

Surface sources have always been problematical, and ground water has for centuries been the main source of supply for the region. (Consider how often wells are mentioned in Genesis, and how often they led to conflict!) The entire flow of the Jordan River

amounts to less than one-third of Israel's current use.

Today,

most of the water is derived from underground water flowing through permeable rocks called aquifers. The main sources of supply are the Coastal Aquifer, which roughly parallels the Mediterranean coast, and the Mountain Aquifer (also called Yargon-Taninim Aquifer), which rises on the West Bank but which also flows westward and thus under pre-1967 Israel.

Given these conditions, and the desire to build an agriculturally based economy, the Zionist movement recognized from its inception that water would be a critical resource. All water is subject to government control, and state-owned firms not only supply water but do most of the prospecting and drilling as well.

Israeli farms have flourished and immigrants have been accommodated because of the availability of water. The Huldah swamp was drained and the National Water Carrier was built to ensure water supplies. Indeed, in its ability to "make the desert bloom," Israel is commonly regarded as a model of sound water management.

The reality is, unfortunately, different from the image. Israel is facing a water crisis — not in the future but right now. Water quantity, water quality, and water politics are all at issue, and solutions must be found simultaneously for all three.

In the years just before the 1967 war, Israel was tapping all of its available fresh water supplies. The Coastal Aquifer was being used to its safe limit (if not over used), the National Water Carrier (completed in 1964) was taking more than the nation's share of Jordan River water, and wells drilled into the aquifers were already causing a decline in the water table.

With the success of the Six Day War, Israel found itself in possession not only of the recharge area for the Mountain Aquifer but also most of the catchment (including the Golan Heights) for the whole Jordan River/Kinneret Lake basin. Security of water had long been a military objective, and now water use could continue at high levels.

Unfortunately, military victories do not promote economic rationality, and throughout the 1980s water use again exceeded 100 percent of the available capacity (the amount one can tap before "mining" occurs). Annual consumption is currently some 200 million cubic metres (MCM) per year (close to 53 billion gallons) greater than available capacity. Adding to the problem is renewed immigration, on the one hand, and successive years of low rainfall, on the other. The latest drought broke this winter with unusually heavy rainfall and snow, but others will occur.

It was the recognition of a developing crisis that led the Israeli State Comptroller to issue a special report on water in December 1990 that referred to "25 Years of mismanagement." Part of the problem lies with habits born in other regions; the average Israeli consumes five times as much water as does a Palestinian (or a Jordanian).

Moreover, unlike the Water Commissioner, who is responsible to

Israel's newest problem - water availability

the Minister of Agriculture, the Comptroller General had no hesitation at pointing to irrigation as another part of the problem. Farming accounts for nearly two-thirds of water use in Israel, yet provides only 5 percent of employment and 10 percent of export earnings. To make matters worse, farmers get water at highly subsidized prices, less than half its true cost and about two-fifths of what urban dwellers pay. Although excessive use of water for irrigation is common throughout the Middle East (indeed, throughout the world), in no other country is the situation quite so politically-charged.

In short, water quantity is not so much an ecological as an economic issue. From a supply perspective, there is plenty of water, provided you can pay for it; from a demand perspective, the cheaper water is, the more abundantly (and wastefully) it will be used. The core of the quantity problem in Israel is that most people, and particularly farmers, pay too little for water. As a result, water conservation is more slogan than imperative.

The second component of Israel's water crisis is less ancient but equally pressing — water quality.

Over-pumping of wells has caused a sharp decline in the water table, which is bad enough in terms of cost and energy use but which also permits seawater to flow into the over-pumped zones. One-tenth of wells in the Coastal Aquifer now produce water too salty for domestic use, and some are too salty for agriculture. Worse, intruding salt water corrodes the limy portions of the porous sandstones that make up the aquifer, so that they become blocked and are reduced in capacity or even destroyed.

Along with over-pumping of aquifers has come pollution of surface water. Israelis have made a good start at controlling air pollution, mainly because it was no one's responsibility and the Ministry of the Environment was able to assert control. No so with water, where the ministries of Agriculture, of Industry, and of Health are conspicuous by their support for vested interests and their absence from defense of water quality. Waste water is allowed to drain wherever convenient, sometimes directly into water courses and sometimes into "wadis" that, at the next rainfall, allow contaminants to seep into aquifers.

Pesticides are a key problem. Per hectare use of pesticides in Israel rates among the highest in the world, yet that in the Palestinian farms along the Jordan River is even higher.

Industrial chemicals are also becoming a problem, but no one knows how much of a problem because neither Israel nor Jordan makes systematic tests. Solvents, petrochemicals, gasoline products, and other wastes, including known carcinogens, are routinely found in spot checks.

A bright spot in the otherwise dismal picture is the wide use of recycled sewage to irrigate non-food agricultural crops. Today, 90 percent of municipal waste water is collected in sewers, 80 percent is treated and 60 percent is reused. Just as with many cities in North America, however, the system has begun to deteriorate, and tests are beginning to show excess contaminants.

Another bright spot is Lake Kinneret, which has been under a unified management plan that prohibits dumping and restricts use of water from the lake. Kinneret retains its quality, and its beauty, which demonstrates the need for joint planning, management and enforcement.

Almost immediately after the 1967 war, Israel integrated West Bank and Gaza water resources into the Israeli system — de facto annexation of the resource if not the Territories. Since then it has maintained tight control with the result that Israel is now depend-



The Kinneret

ent for perhaps one-third of its total water and one-half of its drinking water on sources that originate in rainfall over the West Bank.

Most of that water continues to be tapped, as it was in the pre-1967 period, by wells drilled within Israel proper. In addition, however, West Bank (and Gaza) water is used to supply new Jewish settlements outside the boundaries of pre-1967 Israel. Today water consumption of the 115 or so Jewish settlements in the West Bank is close to that of the entire Palestinian population.

There is of course nothing illegal or immoral about drilling vertically into an aquifer that happens to rise in land belonging to another nation. The supply of water in the aquifer, however, is kept flowing by measures applied on the West Bank that are of questionable legality and morality.

Restrictions on drilling and water use applied to Palestinians on the West Bank have been documented by Dr. Jad Isaac, director of the Applied Research Institute of Jerusalem. Among them:

Only "existing" agricultural uses of water are accepted, which means those which existed in 1967.

West Bank Arabs are not allowed to use water for farming after 4 p.m., which is the traditional (and national) time for irrigation in arid regions.

Reforestation is prohibited in the recharge areas of the aquifer, except on small, private plots.

Jewish settlements receive heavy subsidies for water development, but West Bank Arabs none at all.

As a result of such policies, Palestinians are getting only about 15 percent of the potential supply of West Bank water. Hardly any Palestinian individual or village has received permission to drill a new well for agricultural purposes since 1967. In contrast, deep drilling (which yields superior quantity and quality of water) is permitted for Jewish settlements.

Disturbing as these figures are, it is important not to exaggerate. The issue is one of economic development, not of thirst. Water Commissioner Meir Ben Meir stated the issue starkly: "If the demand is for drinking, we must say 'yes'; we do say 'yes.' But we are not going to stop irrigating our orchards so they can plant new ones."

No one committed to peaceful resolution of the Arab/Israeli conflict denies the need for Israel to be secure in its water supply. As emphasized by Miriam Lowy, however, whose book on the subject is in press, "national security" must be defined in senses broader

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I should point out that Miles is not the only Jew depicted on the show. As it happens, Murphy's two great loves, a Bohemian reporter from whom she is divorced, and a crass but bright talk show host, happen to be Jews. The first fellow is a romantic figure who has appeared only once or twice on the show. The second, a continuing character, is admirable in a nasty sort of way, a match for Murphy in wit, sharp tongue, and strength and conviction. As it happens, both men are the possible fathers of Murphy's illegitimate baby, the baby about which Dan Quayle complained. The talk show host, Jerry Gould, even offered to marry her. It was Jerry who once told Murphy, "I've always found you very attractive in a Nordic Gentile sort of way."

These two fellows counterbalance somewhat the image of the Jew presented in Miles Silverberg, but not much. They do not try that hard to utilize their forceful and determined personalities to play a role of responsibility in the child's life. These two Jewish

fellows are almost a warning that a Jewish male who fathers a child in such a situation can make no claims of Jewish identity upon a child.

Will Murphy's son have a brit milah, a circumcision into the Covenant of Abraham? When the program first began, I had high hopes for its dealing with any issue because of the fine writing which was pointed and yet humorous in a truly human and gentle sort of way. I remember writing in this column that *Murphy Brown* could probably explore world issues, such as the Arab-Israeli conflict, with perspective and insight. I remember saying that we have in this series the most talented and appealing ensemble of actors since the *Mary Tyler Moore Show*. But judging from where the writers have taken — or not taken — Miles Silverberg, I'm beginning to wonder what insights they might have in other matters. Maybe they better stay away from the brit topic. Otherwise, I may find myself echoing completely and without reservations Dan Quayle's protest against the series.

Zimmerman

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45-minute freeway drive home left me exhausted and red-eyed. Untamed by man-made chemicals, my hair looked like a lion's mane. Romance was the last thing on my mind.

This ritual of purification creates Jews out of Gentiles and makes every day kitchen utensils suitable for a kosher

home. It allegedly keeps the sparkle in a marital relationship and elevates sexuality onto a spiritual plane. But if Reform women are to return to the practice of *nikveh*, information alone is not enough to prepare them.

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Water

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than direct control over sources. It must also allow for both population and economic growth — in Jordan and Palestine, as well as in Israel.

The situation is far from hopeless. Although earlier attempts to create agreements to share water supplies in the region fell before Arab refusal to make any agreement with Israel — it would have been an implicit recognition of sovereignty — now that recognition has become thinkable, so too are options for resolution of water problems. Academics on both sides of the Green Line are beginning to argue that there is more to be gained in sharing than hoarding water resources.

However, the situation is not simple. Even the "need" for West Bank water in Israel is hotly contested. Water Commissioners and water companies, who report to the Minister of Agriculture, claim that Israel must hold onto the West Bank. Gideon Fishelson of the University of Tel Aviv's Hammer Institute argues in contrast that with more rational policies in Israel, there would be no need for West Bank water.

Equally controversial is the search for new sources of water. Desalination is commonly suggested, but the process takes enormous quantities of energy (either to distill the water or force it through a membrane), so it is not surprising to find that 60 percent of the world's desalination capacity is located in oil-exporting countries of the Middle East. Even with low oil prices, the cost is about five times what urban dwellers pay for drinking water and much more than what farmers pay.

More promising is the use of aquifers containing brackish water for irrigating salt-tolerant crops, such as olives. Although

these aquifers are isolated and thus non-renewable, and, although pumping costs can be high, Israel is quickly gaining experience with use of salty water.

Any resolution of the triple water crisis depends on three basic changes. First, all countries in the region must make enormously greater efforts to conserve water throughout their economies. This is an ironic demand, because people in these countries are nowhere near so wasteful in their use of water as are North Americans.

The second necessary change is a reduction in the power of the Department of Agriculture to control water supplies and use. It is all very well to make the desert bloom, but sooner or later one has to ask "at what cost?"

Third, Palestinians in the Occupied Territories must receive more water right now and must also play a strong role in determining allocations of water for economic development in the future.

There is a possible quid pro quo here. Palestinians might find that sale of water to meet Israeli needs would provide them with the hard cash they need for development. One could even envision establishment of a bilateral (maybe trilateral) agreement for sharing water resources, as was apparently suggested at Camp David. But this requires a degree of trust that is hardly in evidence today.

There are many options for resolution of the multi-dimensional water problems in Israel. It is less important which option is selected than that some way be found — and soon — to bring water issues within the context of an overall peace solution.

Fleishman

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Henry Monsky's call to me

tion to the fact that there was no such thing as a single Jew-

PERSON

now who's who?