

# MATTERS OF CONSCIENCE®

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RENEWAL 5

## POPULATION

EARTH, AIR, FIRE AND WATER

THROUGHOUT MAN'S RECORDED HISTORY, AND FOR THOUSANDS OF YEARS BEFORE, THESE FOUR BASIC ELEMENTS AND THEIR DERIVATIVES, IN COMBINATION OR ALONE, HAVE HAD THE POWER, WHEN EMPLOYED BY MAN OR NATURE, TO SET THE TERMS FOR THE WAY LIFE IS LIVED ON OUR PLANET.

WE HAVE TENDED TO COMBINE THEM AND THEIR CONSEQUENCES UNDER THE CATCH-ALL TITLE OF "NATURE", BUT SEMANTICS ARE OF FAR LESS CONCERN AS WE EMBARK UPON THE TWENTY-FIRST CENTURY THAN UNDERSTANDING THE PRESENT AND HISTORICAL RELATIONSHIP BETWEEN HOST EARTH AND ITS UNINVITED GUEST, MANKIND.

WE LIVE IN A LARGELY MONOTHEISTIC AGE AND WORLD DOMINATED BY THE THREE DESERT RELIGIONS — CHRISTIANITY, ISLAM AND JUDAISM. OUR EMOTIONAL AND SPIRITUAL COMMITMENT TO THESE FAITHS IS VERY STRONG AND WE HAVE COME TO ACCEPT THEIR LEGENDS, COMMANDMENTS, LAWS, MYTHS, DIETARY RULES, CLOTHING, TRADITIONS, ETC. AS DETERMINANTS OF OUR THOUGHT AND BEHAVIOR. ISLAM IS THE YOUNGEST, FOLLOWED BY CHRISTIANITY AND THEN JUDAISM, BUT, EVEN COUNTING EARLIER TRANSITIONAL VERSIONS THAT NO LONGER ARE WITH US, MONOTHEISM'S LIFE SPAN HAS BEEN BRIEF AND RECENT.

PRIMITIVE, TRIBAL, NOMADIC MAN FACED THE TERRORS OF NATURE EVERY DAY WITHOUT ANY UNDERSTANDING OF THE CAUSES BEHIND ITS EFFECTS. TO PROTECT HIMSELF FROM THE LATTER HE ASSIGNED RESPONSIBILITY FOR THEM TO "SPIRITS"

WHO INHABITED THE MOUNTAINS, SKIES, SEAS, RIVERS, ETC. OF HIS SURROUNDINGS. IN TIME, HE ALSO ASSIGNED A HUMAN FORM TO THEM, AS WELL AS A FANCIFUL SOCIETY AND A LOCALE WHERE THEY COULD INDULGE THEIR SUPERHUMAN WAY OF LIFE.

THIS POLYTHEISTIC AND ANTHROPOMORPHIC VIEW OF RELIGION CAME TO ITS FULLEST FLOWERING IN THE MANY SPECIFIC DEITIES OF GREECE AND ROME AND THE TEMPLES FOR THEIR WORSHIP THAT SPREAD ACROSS THE MEDITERRANEAN WORLD. FAR FROM BEING PURELY SPIRITUAL CENTERS, THESE TEMPLES WITH THEIR ORACLES AND STAFFS PROVIDED POLITICAL AUTHORITY OR GUIDANCE WHEN NEEDED, THE BOND OF BEING ASSOCIATED WITH A PARTICULAR DEITY AND THE OPPORTUNITY FOR COMMERCE AND TRAVEL.

IT IS HARD NOW TO COMPREHEND HOW OVERWHELMING TO MAN HIS RELATIONSHIP WITH NATURE MUST HAVE BEEN. WITHOUT KNOWLEDGE OF CAUSE OR EFFECT, PREVENTION WAS NOT POSSIBLE. IN THIS SITUATION MAN WAS DEFINITELY THE UNDERDOG IN HIS STRUGGLE AGAINST NATURE'S FOUR MOST POWERFUL ELEMENTS.

EARTH PROVIDED HIS FOOD, OFTEN HIS SHELTER, AND THE WOOD AND STONE NEEDED TO BUILD; AIR IN THE FORM OF WIND ENABLED POLLINATION OF PLANTS AND TRAVEL BY BOAT; FIRE WAS THE SOURCE OF HEAT FOR COOKING, BODY WARMTH AND PROTECTION; AND WATER, PERHAPS THE MOST NECESSARY OF ALL, MADE POSSIBLE COOKING, CLEANING, AND THE BASIC BODY CHEMISTRY OF HUMANS AND LIVESTOCK.

**IN THIS ISSUE:** WE INTRODUCE GLOBAL OVERPOPULATION AS IT ACCUMULATES MATHEMATICAL MOMENTUM AND EMERGES AS A MAJOR ISSUE FOR OUR AND OTHER SOCIETIES TO RECOGNIZE AND CONFRONT. THE LATTER IS VITAL, AS IN THE LAST HALF CENTURY THE POPULATION CLOCK HAS RACED AHEAD WHILE WE HAVE LAGGED BEHIND.

**OUR NEXT ISSUE** WILL EXPLORE ASPECTS OF OUR NATIONAL AND INTERNATIONAL FINANCIAL CIRCUMSTANCES THAT CALL FOR REASONED ATTENTION.

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“... AND GOD SAID UNTO THEM,  
‘BE FRUITFUL AND MULTIPLY, AND  
FILL THE EARTH AND SUBDUE IT; AND  
HAVE DOMINION OVER THE FISH OF  
THE SEA AND OVER THE BIRDS OF THE  
AIR AND OVER EVERY LIVING THING  
THAT MOVES UPON THE EARTH.’”

— HOLY BIBLE, BOOK OF GENESIS

WITH SUBSISTENCE BASED ON  
MANPOWER AND WITHOUT ANY KNOWLEDGE OR  
MEANS OF BIRTH CONTROL, LARGE FAMILIES  
WERE VIEWED AS BOTH AN ECONOMIC AND  
SOCIAL NECESSITY THAT FAVORED SURVIVAL.  
THE WORLD WAS MOSTLY A VAST, UNINHABITED  
MASS AND WHAT POPULATION CENTERS EXISTED  
WERE SMALL IN NUMBER AND SIZE.

BUT THEN THE FIRST OF TWO VERY  
SIGNIFICANT CHANGES OCCURRED. THE THREE  
MONOTHEISTIC DESERT RELIGIONS WERE BORN  
AND ALTERED RELIGIOUS THOUGHT IN THE  
MEDITERRANEAN REGION THAT HAD BEEN THE  
POLITICAL AND COMMERCIAL CENTER OF THE  
WESTERN WORLD UNDER THE EGYPTIAN, GREEK  
AND ROMAN HEGEMONIES.

AND, CURIOUSLY, ALTHOUGH THEY  
OFTEN FOUGHT BITTERLY AMONG THEMSELVES  
AS TO GOD’S IDENTITY AND MESSAGE, THEY  
EACH PUT FORTH IN ONE WAY OR ANOTHER THE  
COMMAND TO “BE FRUITFUL AND MULTIPLY”  
AND TO ESTABLISH MAN’S AND, THEREFORE, HIS  
GOD’S, DOMINION OVER THE NATURAL WORLD  
AND ITS MANY LIFE FORMS — A LARGE ORDER,  
INDEED, WITH EVEN LARGER CONSEQUENCES.

IT IS EASY TO SEE HOW THE HUNDREDS  
OF YEARS OF THE CRUSADES MIGHT BE  
EXPLAINED AS BOTH CHRISTIANS AND MUSLIMS  
ACTING UNDER THEIR COMMON MANDATE. BUT  
REGARDLESS OF ITS POLITICAL AND RELIGIOUS  
CONSEQUENCES, WHICH WERE MANY, THE ORDER  
TO MULTIPLY AND ESTABLISH DOMINION WAS  
NOTHING SHORT OF A MARKETING MIRACLE.

BECAUSE IT WAS NOT LIMITED TO  
TIME OR PLACE AND WAS BOTH DELIVERED AND  
OBSERVED AS HOLY WRIT, IT GAINED MOMENTUM  
AND ACCEPTANCE ALIKE FOR EACH OF THE DESERT  
RELIGIONS, AND WAS AN IMPORTANT FACTOR  
IN THE SUCCESSES OF THEIR MISSIONARY  
PROGRAMS.

THE SECOND GREAT CHANGE HAD NO  
CONNECTION TO HOLY WRIT, BUT APPEARED AS  
THE HANDIWORK OF MAN IN THE ARRIVAL OF THE  
INDUSTRIAL REVOLUTION (IR) WITH ADVANCES  
IN KNOWLEDGE OF THE PHYSICAL SCIENCES  
IN GENERAL AND, MORE PARTICULARLY, THE  
INVENTION AND COMMERCIALIZATION OF  
THE STEAM ENGINE IN THE LATE EIGHTEENTH  
CENTURY.

IN THE BRIEF TIME OF A HALF CENTURY

THE IR BLOOMED IN WAYS THAT VASTLY IMPROVED  
THE WESTERN WORLD’S ABILITY TO PROVIDE THE  
TRANSPORTATION AND PRODUCTION OF GOODS,  
TO EMPLOY WORKERS AND TO ESTABLISH RAPID  
COMMUNICATION SYSTEMS. THE WORLD, AND  
MAN WITH IT, WERE BEING TRANSFORMED.

BARELY HEARD, HOWEVER, OVER THE  
HUBBUB OF THE TRANSITION FROM THE AGE  
OF ENLIGHTENMENT TO THE AGE OF INDUSTRY  
WAS THE LOW VOICE AND PROPHECY OF ENGLISH  
CLERGYMAN AND ECONOMIST, REV. THOMAS R.  
MALTHUS, WHO DETECTED SIGNS OF DANGER IN  
THE WORLD’S POPULATION GROWTH. HE ZEROED  
IN ON A MATHEMATICAL RELATIONSHIP BETWEEN  
HUMAN PROCREATION AND AGRICULTURE THAT  
HAD PREVIOUSLY ESCAPED ATTENTION, POINTING  
OUT THAT THE GEOMETRIC INCREASE (1-2-4-  
8-16) OF POPULATION WOULD OUTSTRIP THE  
ARITHMETICAL INCREASES (1-2-3-4-5) WHICH  
GOVERNED PRODUCTION.

MALTHUS HAD HIS SHARE OF CRITICS AND  
HIS WRITINGS MOVED IN AND OUT OF ECONOMIC  
FASHION, BUT HIS MATHEMATICS WERE VALID  
AND ENTIRELY APPROPRIATE FOR DESCRIBING  
THE RESULTS OF UNLIMITED GROWTH WITHIN A  
FINITE SPACE.

REV. MALTHUS WAS CONCERNED WITH  
THE STATE OF HIS CONTEMPORARIES WHO LIVED  
IN EXTREME POVERTY BECAUSE THE IMBALANCE  
BETWEEN POPULATION AND AGRICULTURAL  
PRODUCTION GROWTH RATES WOULD INEVITABLY  
RAISE THE PRICE OF FOOD. IN THE TWO  
CENTURIES THAT HAVE PASSED SINCE MALTHUS  
PROPOSED HIS THESIS IN HIS ESSAY ON THE  
PRINCIPLE OF POPULATION (1798), MODERN  
TECHNOLOGY AND ECONOMICS HAVE MANAGED  
TO IMPROVE AGRICULTURAL PRODUCTION  
AND PROCESSING ENOUGH TO POSTPONE THE  
MOST DIRE CONSEQUENCES OF MALTHUS’  
PROJECTIONS, BUT WE ARE AGAIN IN A TIME OF  
HEAVY AND PERSISTENT POPULATION PRESSURE  
WITH, FOR THE FIRST TIME, GLOBAL FOOD  
PRICE INCREASES AND NO SIGN OF ANOTHER  
TECHNOLOGICAL BUNNY BEING DRAWN FROM THE  
HAT.

TECHNOLOGY IS NOT A CURE-ALL.  
AS WE HAVE FOUND WITH SOME OF ITS PAST  
APPLICATIONS, IT CAN HAVE OVERRIDING  
NEGATIVE PUBLIC HEALTH AND ENVIRONMENTAL  
CONSEQUENCES FROM INDISCRIMINATE AND/OR  
EXCESSIVE USE OF CARCINOGENIC CHEMICALS IN  
FERTILIZERS AND PESTICIDES.

AND PRESENTLY, WHEN POPULATION IS  
EXPANDING FASTER THAN IT EVER HAS BEFORE,  
WE FIND THAT THE SUPPLY OF ARABLE LAND IS  
ACTUALLY DECREASING DUE TO DESERTIFICATION,  
ACIDIFICATION, EXCESS SALINITY, URBAN  
EXPANSION, TOPSOIL EROSIONS, DROUGHT,  
FALLING WATER TABLES, ETC.

FOR TWO GENERATIONS OUR AGE HAS BECOME INCREASINGLY ADDICTED TO TECHNOLOGY AND RELIANT UPON IT TO SOLVE OUR WORLD'S PROBLEMS. IT HAS BEEN OUTSTANDINGLY SUCCESSFUL IN SOME WAYS, BUT NOW, AS OUR NUMBERS AND RELIANCE ACCELERATE FAR BEYOND PREVIOUS LEVELS, WE HAVE TO FACE THE FACT THAT TECHNOLOGY IS NOT A PURE BENEFIT, BUT IS ACCOMPANIED BY THE ACCUMULATING SIDE EFFECTS OF ITS USE, DISTRIBUTION AND DISPOSAL.

THIS POSES WHAT MAY WELL TURN OUT TO BE THE DEFINING QUESTION OF OUR TIME — CAN A FINITE ENVIRONMENT SUSTAIN ITSELF WHEN FACED WITH GEOMETRIC INCREASES IN POPULATION, PRODUCTION, RESOURCE USE AND WASTE? THE ANSWER IS PLAYING OUT WITHIN OUR SIGHT AND IS BEING ASSEMBLED FROM EVENTS THAT HERETOFORE WE HAVE VIEWED AS ISOLATED AND FRAGMENTARY, BUT NOW WITH GROWING FREQUENCY CAN LAY CLAIM TO BEING PARTS OF A LARGER PATTERN.

OUR CONTEMPORARY HUMAN SOCIETY IS THE ONLY ONE IN OUR PLANET'S HISTORY THAT HAS POSSESSED THE TECHNOLOGY AND KNOWLEDGE CAPABLE OF RECOGNIZING AND THEN ACTING UPON NATURAL OR HUMAN FORCES THAT THREATEN AND HAVE THE POWER TO DESTROY US. CAN WE CREATE A COMMON VISION TO UNDERSTAND WHAT WE HAVE WROUGHT? AND THEN WILL WE BE ABLE TO USE THAT VISION TO ACT WITH THE NECESSARY PROMPTNESS AND UNITY?

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ON MARCH 11 AT FUKUSHIMA, JAPAN THE ELEMENTS OF EARTH, AIR, FIRE AND WATER COMBINED TO DELIVER A DEADLY BLOW TO NORTHEASTERN JAPAN. A SHIFT OF TECTONIC PLATES BENEATH THE SEA CAUSED AN EXCEPTIONALLY STRONG EARTHQUAKE WHICH PUSHED ONTO THE LAND A MASSIVE TSUNAMI WHOSE FORCE AND VOLUME KNOCKED OUT THE PUMP AND POWER SYSTEMS AT THE DAICHI NUCLEAR POWER PLANT. FIRES CAUSED EXTENSIVE DAMAGE AT THE POWER PLANT AND SURROUNDING AREAS AND, DEPRIVED OF ITS PROTECTIVE COOLING SYSTEM, RADIOACTIVITY ROSE TO LEVELS TOO HIGH FOR HUMAN CONTACT AND WAS SPREAD BY WIND TO NEARBY COMMUNITIES.

THIS IS A CAUTIONARY TALE IN THAT MANY THOUSANDS OF YEARS HAVE PASSED SINCE PRE-HISTORIC MANKIND HAD TO CONFRONT EARTH, AIR, FIRE AND WATER WITHOUT BENEFIT OF ANY SCIENTIFIC KNOWLEDGE. TODAY, WITH THE ADVANTAGE OF ADVANCED SCIENCE TO TEST, RECORD AND PREDICT THE BEHAVIOR OF THESE ELEMENTS, OUR MECHANISMS FAILED TO PREVENT DISASTER ON A LARGE SCALE.

AS WITH CHERNOBYL, THE ONLY MODERN NUCLEAR PLANT CATASTROPHE OF SIMILAR SIZE, DATA WILL BE COLLECTED, REVIEWED AND REPORTED WITH ENOUGH EXCULPATORY ANALYSIS TO AVOID CITING SPECIFIC RESPONSIBILITY. MORE THAN LIKELY, THE OFFICIAL REPORT WILL MAKE MENTION OF "A SERIES OF UNIQUE AND/OR UNPREVENTABLE CIRCUMSTANCES WHICH COULD NOT BE ANTICIPATED". TIME WILL HAVE PASSED AND WITH IT THE LIVES, MEMORIES AND SUFFERING OF VICTIMS AND SURVIVORS.

BEYOND THEIR IMMEDIATE LOCALES, HOW MANY OF US

TODAY RECALL OR SPEAK ABOUT CHERNOBYL OR THREE MILE ISLAND? CURIOUSLY, IN SPITE OF THE MIND BOGLING AMOUNT OF SCIENTIFIC KNOWLEDGE WE HAVE BEEN ABLE TO UNLOCK IN OUR AGE OF TECHNOLOGY, ALL TOO OFTEN WE ABANDON OUR SEARCH FOR SIGNIFICANCE TO FLIRT WITH BANALITY.

HUMAN POPULATION GROWTH, NATIONALLY AND GLOBALLY, IS ALSO A TOPIC THAT WE IGNORE AT OUR PERIL AS WE PURSUE LESSER AND MORE IMMEDIATE BENEFITS AND RESULTS FROM WHAT WE DISCOVER, WHAT WE THINK AND COME TO KNOW.

WHEN WAS THE LAST TIME, IF EVER, YOU HAD A SERIOUS EXCHANGE OF THOUGHT ABOUT GLOBAL OVERPOPULATION? AND, MORE IMPORTANTLY, WHEN, IF EVER, DID YOU HEAR A "LEADER" FROM THE EXECUTIVE OR LEGISLATIVE BRANCHES OF OUR GOVERNMENT MENTION THE CONSEQUENCES OF UNCONTROLLED POPULATION GROWTH? OR FROM OUR CORPORATE SECTOR?

ENTERING THE SECOND DECADE OF THE TWENTY-FIRST CENTURY, THESE ARE TIMELY, NECESSARY AND RESPONSIBLE QUESTIONS. AND, UNLIKE MANY OTHERS, THEY MUST BE ASKED FOR THE BENEFIT OF ALL, NOT JUST A FEW.

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"THE PROBLEMS IN THE WORLD ARE SO ENORMOUS THEY CANNOT BE SOLVED WITH THE LEVEL OF THINKING THAT CREATED THEM."

— ALBERT EINSTEIN (1879-1955)

EINSTEIN APPLIED THE ABOVE QUOTATION TO A WIDE RANGE OF CONTEMPORARY PROBLEMS, BUT IT IS PARTICULARLY SUITED TO THE MANY FACETS OF OUR ACCELERATING POPULATION PROBLEM. IN ITS SIMPLEST FORM WE CAN DESCRIBE OUR PRESENT POPULATION ISSUE AS THE RESULT OF HUMAN PROCREATION HAVING INCREASED OVER THE PAST FIVE HUNDRED YEARS AT A RATE THAT HAS DISTURBED ITS BALANCE WITH NATURAL RESOURCES AND PRODUCED SIDE-EFFECTS THAT HAVE THE POWER TO ALTER OR DESTROY THE ECONOMIC, SOCIAL AND PHYSICAL FOUNDATIONS OF OUR NATIONAL AND GLOBAL SOCIETIES.

OUR PLANET IS A TRULY AMAZING COLLECTION OF BOTH LIVING AND INERT MATERIALS THAT NATURE HAS ASSEMBLED OVER EONS AND GUIDED INTO A FUNCTIONAL RELATIONSHIP. THIS RELATIONSHIP IS NOT STATIC, BUT HAS COME TO INCLUDE MANY ACTIONS AND REACTIONS TO THE FORCES AND SUBSTANCES IT GENERATES. WITHIN THIS NATURAL WORLD EXIST MANY LIVING SPECIES THAT SHARE PROCESSES AND POINTS OF CONTACT WITH EACH OTHER IN WAYS THAT DETERMINE OUR ENVIRONMENT AND HOW TO SURVIVE IN IT.

ONE OF THE FATEFUL CONSEQUENCES OF "BE FRUITFUL AND MULTIPLY" IS THAT OUR ENORMOUS HUMAN EXPANSION CAN ONLY TAKE PLACE BY DESTROYING OTHER LIFE FORMS — TERRESTRIAL, MARINE, ANIMAL, VEGETATIVE — AND WE ARE NOW AT A POINT OF ACCELERATING IMBALANCE BETWEEN APPETITE AND RESOURCE.

IN THE BRIEF EVOLUTIONARY SPAN OF A FEW MILLION YEARS MAN HAS BEEN PARTICULARLY ADEPT AT BENDING NATURE

TO HIS PURPOSES. THIS, HOWEVER, OFTEN INVOLVES THE LOSS OF OTHER SPECIES. FOR INSTANCE, THE NUMBER OF KNOWN SPECIES EXTINCTIONS THAT HAVE OCCURRED IN THE PAST SIX HUNDRED YEARS IS 869. FAR MORE DISTURBING IS THAT THE NUMBER OF SPECIES CURRENTLY AT RISK OF EXTINCTION IS 18,351.<sup>1</sup>

SPECIES CAN BE OF GREAT VALUE TO OTHER SPECIES. MUCH OF OUR MODERN MEDICINE IS BASED ON CHEMICALS FOUND IN OTHER SPECIES WHICH WE CAN SYNTHESIZE IN A LABORATORY AND THEN USE TO RELIEVE SYMPTOMS OR TO EFFECT CURES. NATURE REVEALS MANY SYMBIOTIC RELATIONSHIPS IN WHICH BOTH ORGANISMS BENEFIT FROM THE PRESENCE OF THE OTHER, BUT NONE IS AS NECESSARY OR EVIDENT PERHAPS AS THE ROLE PLAYED BY THE SCARAB, OR DUNG BEETLE, IN MAN'S EXISTENCE IN AFRICA WHERE EVERY DAY ENORMOUS AMOUNTS OF DUNG ARE DROPPED BY HERDS OF ELEPHANTS, RHINOS, WATER BUFFALOES AND OTHER NATIVE BREEDS. THE DUNG BEETLE, AN AMAZINGLY EFFICIENT CREATURE, CLEANS UP THE LANDSCAPE BY INGESTING OR BY CARRYING OFF TO ITS BURROW MANY, MANY TIMES ITS OWN WEIGHT AND VOLUME OF DUNG.

“. . . HUMANITY'S COLLECTIVE DEMANDS FIRST SURPASSED THE EARTH'S REGENERATIVE CAPACITY AROUND 1980.”  
— MATHIS WACKERNAGEL, 2002

ONE OF THE WAYS WE HAVE COME TO DESCRIBE THE RELATIONSHIP BETWEEN OUR SPECIES AND THE WEB OF INTERACTIONS THAT MAKE UP THE WORLD WE LIVE IN IS THROUGH THE TERM “CARRYING CAPACITY”. IT REFERS TO THE MAXIMUM POPULATION THAT ANY GIVEN AREA CAN COMFORTABLY SUPPORT OVER AN EXTENDED PERIOD OF TIME WITHOUT DETERIORATION.

THIS IS A CONCEPT OF RELATIVELY RECENT ORIGIN DERIVED FROM OUR RAPID POPULATION GROWTH. AT THE END OF WWII OUR COUNTRY'S POPULATION AND CARRYING CAPACITY WERE EQUAL — I.E. THERE WAS ENOUGH ARABLE LAND, WATER, CLEAN AIR, LIVING SPACE AND NATURAL RESOURCES SUCH AS LUMBER, MINERALS, FUEL, ETC. TO SUPPORT THE THEN POPULATION OF 150 MILLION.

TODAY OUR POPULATION IS TWICE WHAT IT WAS THEN AND RISING SHARPLY. MOREOVER, THE COUNTRY'S ABILITY TO PROVIDE FOR ITS EXPANDED POPULATION HAS BEEN LESSENER BY IT. THE RELATIONSHIP BETWEEN LAND AND PEOPLE IS NO LONGER IN EQUILIBRIUM AND AT SOME POINT MUST FAIL! WE CAN STRUGGLE ON MAKING TEMPORARY REPAIRS, BUT THEY WILL ONLY BUY TIME AND WE WILL NOT KNOW HOW MUCH UNTIL IT RUNS OUT.

NOW IS A GOOD TIME TO REREAD THE EINSTEIN QUOTE. WE WILL NEED A NEW LEVEL OF THINKING AND THERE IS NO EVIDENCE TO SUGGEST THAT IT CAN BE PROVIDED BY OUR POLITICAL, COMMERCIAL OR SPIRITUAL “LEADERS”.

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OCCASIONALLY IN MAN'S RECENT HISTORY, ONE CULTURE OR COUNTRY HAS BECOME SO DOMINANT OVER ITS NEIGHBORS THAT ITS LANGUAGE HAS BEEN REFERRED TO AS

“UNIVERSAL”. LATIN, FRENCH AND ENGLISH HAVE ENJOYED THIS DISTINCTION, BUT THERE IS ONLY ONE TRULY UNIVERSAL LANGUAGE ON OUR PLANET, AND IT IS MATHEMATICS, AND IT IS THROUGH ITS NUMBERS THAT OUR POPULATION ISSUE SPEAKS MOST FREQUENTLY AND PERSUASIVELY TO THOSE ABLE AND WILLING TO HEAR IT.

POPULATION NUMBERS EXIST FOR EVERY REGION OF OUR PLANET, NO MATTER HOW REMOTE. AND THEY PROVIDE US WITH A READY TALLY OF OUR POPULATION'S SIZE, DIRECTIONS AND CONSEQUENCES IN AS MUCH DETAIL AS SUITS OUR PURPOSES. TODAY, IN AMERICA AND ELSEWHERE, THOSE PURPOSES ARE SHARPLY DIVIDED BETWEEN THE CAUSE OF OBJECTIVE SCIENCE AND THE PREFERENCES OF POLITICAL AND COMMERCIAL POWER.

OF ALL THE POPULATION NUMBERS AVAILABLE, IN THIS REPORT WE WILL PRIMARILY CONCERN OURSELVES WITH THOSE OF OUR PRESENT CENTURY FOR THE U.S.A. AND THE WORLD. THOSE BELOW ARE OF PRIME IMPORTANCE:

	PRESENT	2050	2010-2050 % CHANGE	2100	2050-2100 % CHANGE
USA (IN MILLIONS)	300	440	46.7	600	36.4
WORLD (IN BILLIONS)	7.0	9.3	32.9	10.1	8.6

SOURCE: VARIOUS — CF END NOTE<sup>2</sup>

THESE NUMBERS HAVE THE BLAND LOOK OF MOST STATISTICS, AND WE CAN EASILY READ THEM AND MOVE ON AS WE SO OFTEN DO, BUT THEIR FULL STORY IS LOADED WITH IMAGES AND CHALLENGES TO WHICH WE SHOULD PAY ATTENTION, AS THE QUALITY OF OUR LIVES AND THAT OF OUR CHILDREN AND GRANDCHILDREN IS GRADUALLY BEING PUT AT EVER GREATER RISK.

WHAT IS THE STORY BEHIND THE STORY OF THESE SEEMINGLY CALM AND HARMLESS ESTIMATES? ACTUALLY, THERE ARE TWO VERY DIFFERENT, BUT EQUALLY ALARMING, NARRATIVES AT WORK. THE FIRST IS SIZE AND THE OTHER IS RATE OF INCREASE, HISTORICALLY REFERRED TO AS “MASS” AND “VELOCITY” IN THE REALM OF MATHEMATICS/PHYSICS.

IN AMERICA, WE ARE ON TRACK TO ADD 140 MILLION PEOPLE TO OUR PRESENT POPULATION BY 2050, AN INCREASE OF ALMOST 50% IN A LITTLE UNDER FORTY YEARS. THE LAST ADDITION OF APPROXIMATELY THIS SIZE WAS THE 150 MILLION INCREASE THAT OCCURRED IN THE SIXTY-FIVE YEARS BETWEEN THE END OF WWII AND 2010.

WHAT IS ESSENTIAL IN ORDER TO UNDERSTAND THE DIFFERENCE BETWEEN THESE TWO PERIODS IS HOW MUCH THE COUNTRY HAS CHANGED. THOSE WHO ARGUE FOR UNLIMITED GROWTH DO NOT UNDERSTAND THAT GROWTH THEN AND GROWTH NOW ARE DIFFERENT PROCESSES WITH DIFFERENT CONSEQUENCES AND THAT, FOR THE MOST PART, THE DIFFERENCE IS THE RESULT OF GROWTH ITSELF.

IN THE AMERICA OF 1945, POPULATION AND CARRYING CAPACITY WERE EQUAL. TODAY'S POPULATION OF 300 MILLION PLUS IS MORE THAN TWICE THE 1945 CARRYING CAPACITY. THE LATTER HAS DECREASED AND WILL CONTINUE TO DO SO AS ADDED POPULATION TAKES ITS TOLL ON FINITE RESOURCES SUCH AS ARABLE LAND, WATER TABLES, CLEAN AIR, WETLANDS, WASTE DISPOSAL, CONSTRUCTION SPACE, TRANSPORTATION, ETC.

THE FULL THROTTLE GROWTH GROUPS ARGUE THAT ADDED POPULATION IS SUCH AN ECONOMIC BENEFIT THAT IT WILL NOT PENALIZE OUR ECONOMIC STRUCTURE, BUT RATHER WILL IMPROVE IT. SUCH CLAIMS ARE COMPOSED EQUALLY OF NONSENSE AND WISHFUL THINKING AS POPULATION GROWTH IN THE ABOVE RANGE OF 46.7% WOULD BE ACCOMPANIED BY SUBSTANTIAL ECONOMIC AND SOCIAL COSTS TO WHICH OUR RECENT EXPERIENCE TESTIFIES IN CONSIDERABLE DETAIL.

REGARDING ECONOMIC RESULTS, HISTORY CAN SERVE AS A PARTICULARLY EFFECTIVE GUIDE. PRES. EISENHOWER'S LEGISLATION CREATING OUR INTERSTATE HIGHWAY SYSTEM STANDS OUT AS HAVING A TRULY NATIONAL ECONOMIC AND SOCIAL IMPACT UPON THE NATION, AND THERE IS NO DOUBT THAT IT, IN COMBINATION WITH EXPANDED POPULATION, CAR OWNERSHIP AND TRAVEL, HAS GREATLY INCREASED FEDERAL GASOLINE TAX REVENUES WHICH WERE TO PROVIDE THE NECESSARY MAINTENANCE FUNDS.

BUT THIS HAS NOT HAPPENED. LABOR, MATERIALS AND LAND ACQUISITION COSTS HAVE RISEN SHARPLY. IN MANY STATES MAINTENANCE HAS BEEN ABANDONED IN FAVOR OF NEW CONSTRUCTION, AND TODAY WE ARE FACED WITH OUR HIGHWAY SYSTEM IN A STATE OF MAJOR DETERIORATION, REPAIR ESTIMATES THAT RUN TO MANY BILLIONS OF DOLLARS AND BOTH FEDERAL AND STATE BUDGETS UNDER INTENSE DEFICIT REVIEWS.

IN THE TIME SINCE EISENHOWER'S PRESIDENCY WE HAVE BURDENED OURSELVES WITH TRILLIONS OF DOLLARS OF DEBT WHICH HAS NOW FINALLY GAINED CONGRESS' ATTENTION. IT IS NOT LIKELY THAT THE POLITICAL OR ELECTORAL WILL COULD BE FOUND TO UNDERTAKE AN EXPENSIVE RECONSTRUCTION PROGRAM THAT MIGHT WELL CONTINUE FOR A DECADE.

THERE ARE NUMEROUS ADDED SOCIAL COSTS THAT COME WITH POPULATION GROWTH FOR WHICH IN OUR TIME THERE CAN BE NO REASONABLE EXPECTATION OF ASSIMILATION. WE SAY THIS BECAUSE WE HAVE ENTERED A PERIOD IN WHICH NEITHER THE HOSTS NOR THE MIGRANTS ARE AS COMMITTED TO THIS ONCE HIGHLY SUCCESSFUL PROCESS AS THEY USED TO BE. INDEED, THE METHODS, THE EMOTIONS, THE LAWS THAT PREVIOUSLY MARKED OUR PERIODS OF HIGH POPULATION GROWTH ARE NO LONGER VALID DETERMINANTS. THEY ARE UNABLE TO CONFRONT THE GATHERING STRENGTH OF CONTEMPORARY POLITICAL AND SOCIAL AGENDAS. THEY HAVE BECOME IRRELEVANT.

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ONE TROUBLE WITH ADDED COSTS IS THAT THEY DON'T ALWAYS STAY WHERE THEY BELONG. THIS IS ESPECIALLY TRUE OF SOCIAL COSTS SUCH AS HEALTH CARE, WELFARE, HOUSING AND OTHER SIMILAR AID PROJECTS WHICH ARE FUNDED FROM NATIONAL EXPENSE PROGRAMS AND USUALLY PASSED ON TO THE TAXPAYER. IN SOME CASES LOCAL HOSPITALS HAVE NOT BEEN ABLE TO ACCOMMODATE THE GROWING DEMAND FOR CARE BY NEWLY ARRIVED IMMIGRANTS AND THEIR OFFSPRING, AND HAVE HAD TO SHUT DOWN. LOSS OF SERVICE FOR A COMMUNITY IS ANOTHER FORM OF COST THAT CAN AFFECT LIVES ON A DAILY BASIS.

EDUCATION IS A PARTICULARLY DIFFICULT AREA OF IMPACT IN THAT STATES AND LOCALITIES ARE CAUGHT BETWEEN

THE DEMANDS OF SERVICES (FACULTY) AND FACILITIES (CONSTRUCTION). OUR EDUCATIONAL SYSTEM IS IN A COSTS AND RESULTS MESS OF OUR OWN MAKING.

IF WE TAKE A SCHOOL WITH 300 STUDENTS AND INCREASE IT OVER TEN YEARS BY 46.7% WE WILL THEN HAVE A STUDENT BODY OF 440 AND FACULTY COSTS WILL HAVE BEEN INCREASED ALONG WITH OTHER COSTS THAT RELATE DIRECTLY TO STUDENT ENROLLMENT.

PHYSICAL PLANT CAN OFTEN BE EXTENDED WITH RELATIVE EASE BY ADDING MORE CLASSROOMS AND PARKING SPACE GRADUALLY. BUT WHAT IF THE SCHOOL IS HEMMED IN, HAS REACHED ITS LIMITS AND MUST RELOCATE ITSELF? THE USUAL ANSWER TAKES THE FORM OF RAISING THE NECESSARY FUNDS FOR ACQUISITION, CONSTRUCTION AND STAFFING THROUGH A BOND ISSUE BY WHICH PRINCIPAL AND INTEREST BECOME PUBLIC (I.E., TAXPAYER) OBLIGATIONS.

THESE EXAMPLES OF LOCAL EFFECTS OF POPULATION GROWTH ARE ONLY SMALL PIECES OF A MUCH LARGER PUZZLE TO THE SOLVING OF WHICH OUR AND OTHER GOVERNMENTS SHOULD BE FULLY DEDICATED. UNFORTUNATELY, THIS HAS NOT TAKEN PLACE — PARTIALLY BECAUSE OF PUBLIC IGNORANCE AND DISCOMFORT REGARDING THE SUBJECT, AND ALSO AS THE RESULT OF THE DETERMINED RESISTANCE OF COMMERCIAL, POLITICAL AND RELIGIOUS INSTITUTIONS WHICH WE WILL ADDRESS LATER.

BEYOND THE LOCAL HOSPITAL/SCHOOL CLOSINGS, TRAFFIC CONGESTION AND ENVIRONMENTAL PROBLEMS, THE MOVEMENT OF OTHER MAJOR FORCES ON A GLOBAL SCALE WITH GLOBAL RESULTS IS BEING FUELED BY UNCONTROLLED POPULATION GROWTH. EACH OF THESE FORCES HAS ITS OWN CONSTITUENCY SO THAT THERE IS SOME RECOGNITION OF ITS IMPORTANCE, BUT THERE HAS BEEN NO ATTEMPT BY OUR MASS MEDIA, CORPORATE SECTOR AND GOVERNMENT TO CONNECT THE DOTS, TO SHOW THEIR INTERRELATIONSHIP, TO BUILD AN INFORMED CASE FOR ACTION.

WE LIVE IN A TIME OF RISING TEMPERATURES, POPULATION AND CONSUMERISM. IT IS FULLY WITHIN OUR MEANS TO CONTROL THESE FORCES, BUT SO FAR WE HAVE NOT CHOSEN TO DO SO. POLITICAL LIP SERVICE IS OFFERED AT TIMES AND OCCASIONS WHEN IT SEEMS CALLED FOR, BUT A FULL SCALE EFFORT THROUGH THE UN OR THE INTERNATIONAL TREATY ORGANIZATIONS THAT COVER MOST OF THE WORLD HAS NOT BEEN MOUNTED.

THE MOST SERIOUS JUNCTION WHERE THESE THREE FORCES COME TOGETHER IS IN THE PRICE OF FOOD — NOT JUST OUR AMERICAN MENU, BUT IN PRICES EVERYWHERE. FOOD DEPENDS UPON NATURE WHICH IS OUR PLANETARY MECHANISM FOR CONVERTING A VARIETY OF PROCESSES AND MATERIALS INTO THE NOURISHMENT NEEDED TO SUSTAIN LIFE.

RIISING TEMPERATURE REDUCES FOOD HARVESTS. WE CAN EASILY RECALL ITS EXTREME RESULTS FROM PHOTOS OF OUR DUST BOWL IN THE 1930s, THE FREQUENT AFRICAN DROUGHTS AND PLAGUES, RUSSIA'S FIRES LAST SUMMER AND GROWING DESERTIFICATION IN BOTH CHINA AND SUB-SAHARAN AFRICA.

NATURE'S REGULATION OF OUR LIVES IS A VAST AND CONTINUING PROCESS WHICH OUR PLANET DOES NOT YET FULLY COMPREHEND. AND YET, WITHIN ITS VASTNESS, NATURE

OFTEN ESTABLISHES VERY NARROW OPERATIONAL LIMITS. IN THE REALM OF WORLD FOOD PRODUCTION THERE IS GENERAL AGREEMENT THAT A RISE OF ONE DEGREE CELSIUS AVERAGE TEMPERATURE WILL CAUSE A DECREASE OF 10% IN CROP HARVESTS.<sup>3</sup>

THAT'S A STARTLING FACT, AND IT'S AN ENORMOUS PRICE TO PAY FOR WHAT MAY SEEM LIKE A SMALL VARIATION. JUST LAST SUMMER RUSSIA'S EXCEPTIONAL HEAT WAVE DESTROYED A THIRD OR MORE OF THE RUSSIAN/UKRAINIAN GRAIN CROP<sup>4</sup>, AND WORLD PRICES WERE FURTHER IMPACTED BY THE EQUALLY UNUSUAL AND DESTRUCTIVE FLOODS THAT INUNDATED LARGE AREAS OF AUSTRALIA AND PAKISTAN.

POLITICS CAN ALSO ENTER THE EQUATION AS, FOR INSTANCE, WHEN RUSSIA AND INDIA RECENTLY CUT THEIR GRAIN EXPORTS TO KEEP DOMESTIC PRICES DOWN WITH THE RESULT THAT THE PRICE ON THE WORLD MARKET ROSE SHARPLY.

THE INTERPLAY OF CAUSE AND EFFECT BETWEEN THESE THREE FORCES IS ENDLESS AND HAS TAKEN ON NEW AND GREATER SIGNIFICANCE AS THEIR NUMBERS HAVE INCREASED. NOT ONLY DOES MORE POPULATION CREATE GREATER DEMAND, BUT THIS DEMAND MUST BE MET FROM A SMALLER PRODUCTION CAPACITY AS POPULATION GROWTH'S NEED FOR HOUSING, COMMERCE, TRANSPORTATION, EDUCATION, ETC. REDUCES THE AMOUNT OF OPEN LAND AVAILABLE.

WOULD IT SURPRISE YOU TO KNOW THAT AMERICA'S ECOLOGICAL FOOTPRINT IS NOW 19.4 ACRES? THAT IS THE AMOUNT OF LAND NOW NEEDED TO MEET THE NEEDS OF EACH NEW UNIT OF POPULATION. THE HUNDRED MILLION INCREASE WE EXPECT BEFORE MID-CENTURY WILL REQUIRE 1.9 BILLION ACRES FOR ITS PURPOSES, BUT ONLY IF THE "FOOTPRINT" REMAINS THE SAME<sup>5</sup>. IT COULD INCREASE.

THESE FIGURES CANNOT HELP BUT POSE THE QUESTION WHETHER THE PRICE OF OUR PRESENT POPULATION GROWTH IS A REASONABLE ONE, BUT IT IS A QUESTION THAT WILL BE NEITHER ASKED NOR ANSWERED BY OUR COMMERCIAL, POLITICAL, AND RELIGIOUS LEADERS OR THE MAIN STREAM MEDIA (MSM) THROUGH WHICH THEY MOST OFTEN MAKE CONTACT WITH THE PUBLIC.

OUR CURRENT RAMPANT CONSUMERISM HAS BEEN IN THE MAKING FOR ABOUT A CENTURY. ITS ORIGINS GO BACK TO THE IR, BUT IT CAME OF AGE AND WAS SANCTIFIED BY THE MARKETING MIRACLE OF MODERN MASS AND MULTIPLE MEDIA. THE MEANS BY WHICH OUR EXCESSIVE CONSUMERISM WAS ABLE TO IMPOSE AND MAINTAIN ITS GRIP ON THE AMERICAN PUBLIC WILL BE EXPLORED IN A LATER CHAPTER ON ECONOMICS. WHILE IT SEEMS TO MOSTLY SERVE THE COMMERCIAL SECTOR, IT IS AN ELEMENT IN OUR SOCIETY THAT IS HIGHLY INFLUENCED BY POPULATION GROWTH WITHOUT WHICH IT COULD NOT HAVE OBTAINED ITS PRESENT IMPORTANCE.

AS WITH OTHER ASPECTS OF UNCONTROLLED GROWTH, THERE ARE WARNINGS TO BE FOUND. THE POPULATION/ CONSUMERISM CONNECTION IS STRONG AND, WHETHER OPERATING SEPARATELY OR IN TANDEM, BOTH FORCES HAVE CONTRIBUTED TO THE RECENT AND RAPID EXPANSION OF THE SIZE OF OUR "ECOLOGICAL FOOTPRINT".

THIS CONSTITUTES A CLASSICAL "DOUBLE WHAMMY" WHEREBY BOTH THE NUMBERS AND THEIR CONSEQUENCES INCREASE.

"BETWEEN EARLY 2007 AND 2008, WORLD WHEAT, RICE, CORN AND SOYBEAN PRICES CLIMBED TO ROUGHLY TRIPLE THEIR HISTORICAL LEVELS."

— WORLD ON THE EDGE  
BY LESTER R. BROWN

IT IS INEVITABLE THAT THE CONTINUING RISE OF TEMPERATURES, POPULATION AND CONSUMERISM WILL PUSH FOOD PRICES UP TO NEW LEVELS IN THE YEARS AHEAD AS THEY HAVE IN THE PAST. THIS IS A DANGEROUS TREND WITH THE POSSIBILITY OF SUDDEN AND DISRUPTIVE POLITICAL RESULTS.

MANY PEOPLE ARE ABLE TO OBSERVE AND ABSORB HIGHER FOOD PRICES BECAUSE THEY ARE A MINOR BUDGET ITEM, BUT FOR THE FAR MORE NUMEROUS POOR IN THE WORLD, FEEDING THEMSELVES IS THE MOST IMPORTANT EXPENSE IN THEIR LIVES, TAKING FROM 25% TO 50% OF THEIR INCOME. THOSE THAT ARE MOST AFFECTED ARE THE URBAN POOR WHO DO NOT HAVE LOCAL FOOD SOURCES NEARBY AND WHERE PRICES ARE AT THEIR HIGHEST DUE TO THE ADDITIONAL COST OF TRANSPORTATION, DISTRIBUTION AND SPOILAGE FACTORS.

HISTORY CARRIES A LONG RECORD OF THE POWER OF FOOD RELATED UPRISINGS. WHAT CAN START AS A PROTEST CAN BE SUDDENLY TRANSFORMED. A RUMOR, A SPEECH, A GUNSHOT OR TWO, BLOODSHED, THE CROWD BEGINS TO MOVE, THE SPIRIT OF THE MOB TAKES OVER, AND SUDDENLY PROTEST HAS BECOME REVOLUTION.

THE FRENCH REVOLUTION WAS SUCH AN EVENT. BAD WEATHER CAUSED SMALL HARVESTS THAT LED TO HIGHER BREAD PRICES AGAINST WHICH THE MIDDLE AND LOWER CLASSES PROTESTED. INITIALLY, THE KING WAS SLOW IN REACTING, BUT THEN DECIDED TO MAKE WHEAT AVAILABLE TO THE PARISIAN CROWDS. ALAS, HE WAS TOO LATE. THE BASTILLE WAS ATTACKED, LIVES WERE LOST AND THE REVOLUTION HAD BEGUN.

SUCH SUDDEN VOLATILITY OCCURS MOSTLY IN COUNTRIES WHERE THE RIGHT OF ASSEMBLY AND PROTEST ARE NOT ENCOURAGED OR ALLOWED, AND WHERE YEARS OF REPRESSION CAN QUICKLY PROVIDE THE SPARK NECESSARY TO IGNITE REVOLT.

IN OUR COUNTRY WE HAVE AN HONORED TRADITION OF PROTEST DERIVED FROM OUR OWN FOUNDING AND OUR CONSTITUTION. WE HAVE MOSTLY PERMITTED PROTEST AND HAVE HAD FEW INSTANCES OF OUT OF CONTROL MOBS AND VIOLENCE.

BUT OUR PUBLIC PROTESTS HAVE BEEN MOSTLY OVER MATTERS OF ECONOMIC OR POLITICAL IDEOLOGY WITH SIGNS AND BANNERS BEARING THE MESSAGE AND LEADING THE CROWD. WE HAVE NOT ENDURED THE KIND OF PROTESTS OCCASIONED BY MASS HUNGER OF FAMILIES IN WHICH EVERY STOMACH IS EMPTY. THEY ARE MORE BITTER AND, WITH LITTLE TO LOSE, MORE VIOLENT. SIGNS AND BANNERS GIVE WAY TO KNIVES, GUNS AND THE UBIQUITOUS MOLOTOV COCKTAIL!

FOOD RIOTS ARE NOT A TOPIC FOR IMMEDIATE THOUGHT IN AMERICA, BUT THE PRESSURES ON WORLD FOOD PRICES ARE STRONG AND CONSTANT. THERE ARE FLASH PRICE LEVELS IN THE POVERTY CENTERS OF EUROPE, ASIA, AFRICA AND SOUTH AMERICA THAT WILL BRING PROTESTERS INTO THE STREETS IN GREAT NUMBERS, AND IT IS ENTIRELY POSSIBLE

THAT SYMPATHETIC DEMONSTRATIONS WILL BE ORGANIZED AND TAKE PLACE HERE TOO.

AMERICA HAS HISTORICALLY BEEN A NET EXPORTER OF FOOD AND HAS BEEN ABLE TO FEED OURSELVES AND OTHER POPULATIONS FROM THE BOUNTY OF OUR LAND, BUT WITH OUR RISING POPULATION AND SHRINKING AGRICULTURAL BASE WE ARE ON THE WAY TO BECOMING A NET IMPORTER OF FOOD. THE ADDITION OF 100 MILLION NEW MOUTHS TO FEED WILL CERTAINLY ACCELERATE THAT CHANGE, IN WHICH CASE OUR FOOD PRICES WILL AGAIN BECOME MORE EXPENSIVE.

THERE IS NO REASON TO BELIEVE THAT WE CAN ESCAPE THE EFFECTS OF THE PRESSURES THAT LINK OUR WORLD'S POPULATION AND FOOD SUPPLIES. BECAUSE WE ARE AN AFFLUENT SOCIETY A SMALLER PERCENTAGE OF AMERICANS THAN INDIANS OR CHINESE WILL BE SUBJECT TO THE ECONOMIC, PSYCHOLOGICAL AND PHYSICAL PAIN OF PERSISTENT HUNGER, BUT WE ARE NOT IMMUNE AND SHOULD REFLECT A NATIONAL, AS WELL AS GLOBAL, RECOGNITION OF THE FOOD/POPULATION EQUATION IN OUR NATIONAL DISCUSSIONS AND POLICIES.

“ALL CAUSES ARE LOST CAUSES WITHOUT LIMITING HUMAN POPULATION”

— PAUL EHRLICH

OUR EARLIEST REFERENCE IN THIS CHAPTER WAS TO THE FOUR BASIC PHYSICAL ELEMENTS THAT DETERMINE MAN'S ABILITY TO SUSTAIN HIS SOCIAL AND PHYSICAL PRESENCE ON OUR PLANET — EARTH, AIR, FIRE AND WATER. WHILE MAN HAS INCREASED HIS ABILITY TO PUT THESE ELEMENTS TO USE FOR HIS OWN BENEFIT, THEY REMAIN QUITE CAPABLE AT ANY TIME, WHETHER ALONE OR IN COMBINATION, TO STRIKE BACK WITH SUFFICIENT STRENGTH TO DESTROY MAN'S WORKS AND POPULATION.

THE EXPLOSION OF THE LATTER IN THE LAST CENTURY AND A HALF HAS INTRODUCED A NEW THREAT IN THE FORM OF RISING DEMAND AND SHRINKING SUPPLY OF THE PLANET'S FOOD SOURCES THAT WILL PUSH GLOBAL FOOD PRICES FAR BEYOND THE REACH OF MANY PEOPLE AROUND THE WORLD.

WE SHOULD BE AWARE OF HOW STEEP OUR PLANET'S POPULATION RISE HAS BEEN. IN THE LAST TWO CENTURIES IT HAS GROWN FROM 1 BILLION TO 7 BILLION WHEREAS IT TOOK MANY THOUSANDS OF YEARS TO REACH THE FIRST BILLION<sup>6</sup>. AND IN ONLY THE LAST FORTY YEARS OF THE PAST CENTURY GLOBAL POPULATION DOUBLED FROM 3 BILLION TO 6 BILLION!<sup>7</sup> IT NOW INCREASES AT THE RATE OF 80 MILLION ANNUALLY!

FACED WITH THIS MATHEMATICAL EVIDENCE OF URGENCY, WE CANNOT AVOID ASKING OURSELVES AND OTHERS — “WHY IS THIS GLOBAL PROBLEM THAT CARRIES POTENTIALLY LETHAL CONSEQUENCES FOR MANY MILLIONS OF PEOPLE AND OTHER SPECIES NOT A MATTER OF WIDE PUBLIC DISCUSSION AND CONCERN HERE AND ELSEWHERE?” WE CAN ONLY SPEAK KNOWINGLY ABOUT THE U.S., BUT SUSPECT THAT ELSEWHERE, AS HERE, IT TOUCHES ON SIMILAR ASPECTS OF HUMAN NATURE AND BEHAVIOR.

POPULATION IS BOTH THE MOST AVOIDABLE AND MOST AVOIDED MAJOR ISSUE OF OUR TIME, AND IT IS AS INSEPARABLE FROM ITS CONSEQUENCES AS IT IS FROM ITS ORIGINS. IT IS

WHERE THE ENVIRONMENTAL “BUCK” STOPS.

TO FULLY UNDERSTAND ITS PRESENT IMPORTANCE WE MUST RECOGNIZE THAT IT IS A KEY CONTRIBUTOR TO MANY OF THE PROBLEMS THAT NOW PRESS UPON OUR PLANET — AIR POLLUTION, EXCESSIVE CARBON DIOXIDE (CO<sub>2</sub>) LEVELS, EXHAUSTION OF IRREPLACEABLE FRESH WATER AQUIFERS THAT SERVE HIGH DENSITY URBAN CENTERS, WETLANDS DESTRUCTION, OVERFISHING AND POLLUTION OF OUR MARINE FOOD STOCKS, SPECIES LOSS, CONVERSION OF ARABLE LAND FOR DEVELOPMENT, RISING FOOD PRICES, DESERTIFICATION, MELTING OF ARCTIC ICE AND THE MOUNTAIN GLACIERS THAT FEED THE WORLD'S GREAT RIVERS, TRASHING OF OUR OCEANS, BURNING/TIMBERING OF OUR FEW REMAINING RAINFORESTS, AND OTHERS.

WE HAVE ARRIVED AT A TIME IN HISTORY AND AT A LEVEL OF POPULATION WHEN MINOR CORRECTIONS WILL NOT SUFFICE, WHEN POPULATION'S MOMENTUM IS OF SUCH STRENGTH THAT THE PHYSICAL AND SOCIETAL HEALTH OF OUR PLANET CAN ONLY BE MAINTAINED BY TREATING THE ROOT CAUSE OF THEIR DECLINE — INCREASINGLY RAPID, UNCONTROLLED HUMAN POPULATION GROWTH.

UNFORTUNATELY, OUR GLOBAL GATEKEEPERS — OUR POLITICAL, COMMERCIAL, SPIRITUAL AND MEDIA “LEADERS” — ARE IN DENIAL AND CANNOT ACT EVEN THOUGH WE ARE ABLE TO SEE THE APPROACHING TRAIN IN THE TUNNEL AND HAVE THE ABILITY TO BRING IT TO A TIMELY HALT.

PRIOR CIVILIZATIONS HAVE DISAPPEARED BECAUSE THEY WERE UNABLE TO COMPREHEND THE INTERRELATEDNESS BETWEEN HUMAN ACTIVITY AND NATURAL FORCES. WE ARE ABLE TO DO SO AND IT IS OUR TIME AND TURN NOW TO PUT OUR TECHNOLOGY AND INTELLIGENCE TO ITS MOST CRITICAL USE.

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THE POPULATION ISSUE, REACHING AS IT DOES EVERY CORNER OF OUR EARTH AND LIVES, ASKS AWKWARD QUESTIONS AND CHALLENGES SOME OF THE STRONGEST RELIGIOUS, ECONOMIC AND POLITICAL BASES OF OUR SOCIETY. THEIR RESPONSE HAS BEEN DEPLORABLY RUTHLESS, FOR, ALTHOUGH WE FACE A SIMILARLY SERIOUS THREAT FROM THE DIMINISHING SUPPLIES OF OIL AROUND THE WORLD, THAT PROBLEM HAS RECEIVED WIDESPREAD OFFICIAL COMMENT AND PUBLICITY. WITH POPULATION, THE INFORMATION LOCKDOWN BY OUR GOVERNMENT, MEDIA, ACADEMIC INSTITUTIONS AND CHURCHES HAS BEEN ALMOST TOTAL.

THE THREE DESERT RELIGIONS OF JUDAISM, ISLAM AND CHRISTIANITY ACCOUNT FOR THE GREAT MAJORITY OF AMERICA'S RELIGIOUS COMMUNITY. THERE ARE A FEW HINDUS AND OTHER MINOR SECTS, BUT THE VARIOUS GROUPS AND SUB-GROUPS WITHIN THE DESERT TRIO DEFINE RELIGION IN AMERICA, AND THEY SHARE MANY SACRED TENETS AND TEXTS EVEN THOUGH SOME DIVERGENCE AND DIFFERENTIATION HAS OCCURRED AS THE RESULT OF CHANGES WROUGHT BY THE ECONOMIC, POLITICAL AND MILITARY EVENTS OF THE LAST TWO THOUSAND YEARS.

THE SINGLE MOST IMPORTANT TIE BETWEEN RELIGION

AND POPULATION, HERE AND THROUGHOUT THE WORLD, HAS BEEN THE COMMANDMENT EMBRACED BY MUSLIMS, JEWS AND CHRISTIANS WITH EQUAL FERVOR TO "BE FRUITFUL AND MULTIPLY", MEANING, OF COURSE, TO PROCREATE THEIR OWN KIND AND TO CONVERT OTHERS.

THE POWER OF THIS COMMAND AS A MOTIVATING FORCE FOR GROWTH AND DEVELOPMENT STEMS FROM THE FACT THAT IT SERVES BOTH MARKETING AND IDEOLOGICAL PURPOSES.

FOR MARKETING, IT BECAME THE BASIS FOR THE GREAT MISSIONARY EFFORTS, MANY IN THE FORM OF EXTREMELY VIOLENT AND BLOODY WARS, UNDERTAKEN BY MUSLIMS AND CHRISTIANS OVER MANY CENTURIES. THE MISSIONARY WAS THE "ADVANCE MAN", THE EXPERT FROM THE HOME OFFICE WITH SPECIAL PRICES WHO COULD LEAD YOU THROUGH THE CATALOG AND ANSWER ALL YOUR QUESTIONS. MISSIONARIES OF ALL FAITHS WERE EXTRAORDINARILY COURAGEOUS AND COMMITTED. THEIR CALLING WAS LITERALLY A MATTER OF LIFE AND DEATH FROM ONE DAY TO THE NEXT.

BUT IT IS QUITE PROBABLE THAT THE MISSIONARY EFFORT COULD NOT HAVE ACHIEVED THE RESULTS IT DID WITHOUT ITS IDEOLOGICAL COUNTERPART, FOR ALL THREE FAITHS PROVIDE THE MESSAGE THAT MAN IS FORMED IN GOD'S IMAGE. THIS IS A BRIEF, BUT THEOLOGICALLY COMPLICATED, STATEMENT WHICH PROVIDED THE ITINERANT MISSIONARIES WITH MUCH OF THE PHYSICAL, INTELLECTUAL AND SPIRITUAL IMPETUS NEEDED TO CHANGE FAITHS AND LIVES.

THESE TWO ARTICLES OF BELIEF — CONTINUED EXPANSION BY PROCREATION AND BEING MADE IN GOD'S IMAGE — ARE SO DEEPLY IMBEDDED IN OUR RELIGIOUS ROLE THAT THEY ARE OFTEN USED TO DETERMINE WHAT NEW THOUGHT OR INFORMATION MAY BE CONSIDERED.

WITHOUT ARGUMENT, THEY HAVE BEEN EXTREMELY EFFICIENT IN FUELING THE RELIGIOUS EXPANSION OF OUR "MODERN" AGE AND IN PROTECTING THE SPIRITUAL HOME FRONT, BUT STILL, IN JUST TWO HUNDRED YEARS, WORLD POPULATION HAS INCREASED FROM ONE TO SEVEN BILLION.

RELIGIOUS THOUGHT NOW CONFRONTS A PRESSING CONUNDRUM. IF THE GREAT EXPANSION OF THE WORKS OF FAITH AND THE FAITHFUL OVER PAST CENTURIES HAS BEEN THE RESULT OF GOD'S PURPOSE, UNDER WHAT AUTHORITY DOES MAN UNDERTAKE TO REDUCE, ALTER OR REMOVE THEM? THE RELIGIOUS COMMUNITY'S ANSWER SO FAR HAS BEEN THAT AUTHORITY, DIVINE OR OTHERWISE, DOES NOT EXIST TO RECOGNIZE OR DISCUSS THE MATTER.

THIS ATTITUDE MAY CHANGE AS CIRCUMSTANCES DO, BUT PRESENTLY OVERPOPULATION IS NOT A TOPIC OF RELIGIOUS ENGAGEMENT OR, UNFORTUNATELY, OF LEADERSHIP. RELIGIOUS MISSIONARY EFFORTS HAVE BEEN MOST EFFECTIVE AMONG UNDEVELOPED AREAS AND POOR POPULATIONS AND, SADLY, IT IS THESE THAT MAY BE MOST SERIOUSLY IMPACTED IF OVERPOPULATION CONTINUES AT ITS PRESENT PACE.

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ANOTHER COMMUNITY OF INTEREST THAT SHUNS ANY ACKNOWLEDGEMENT OF OVERPOPULATION IS OUR CORPORATE SECTOR. THERE, PROFIT IS THE ENDURING GOAL AND IT IS WELL

SERVED BY EXPANSION OF THE PRODUCT LINE OR THE MARKET BASE. NUMBERS ARE THE PREFERRED LANGUAGE OF COMMERCE AND MANAGEMENT'S PURSUIT OF THE "RIGHT" ONES DOES NOT ALLOW MUCH TIME OR EFFORT FOR "EXTRANEIOUS" ISSUES.

THE GEOMETRIC GROWTH OFFERED BY ADDED POPULATION IS A GIFT FROM THE MARKETING GODS AS IT PROVIDES THE MEANS FOR MORE SALES BOTH NOW AND IN THE FUTURE. HUMAN PROCREATION IS NOTHING SHORT OF A MARVEL OF COMMERCIAL EFFICIENCY, REQUIRING NO INVESTMENT, NO EFFORT AND NO MAINTENANCE BY THE MARKETER.

AS MILLIONS MORE UNITS OF POPULATION ARE ADDED, SO ARE INDIVIDUAL TASTE DIFFERENCES WHICH ARE THEN TRANSLATED INTO CUSTOMER PREFERENCES FOR COLOR, SIZE, SHAPE, PERFORMANCE, ETC. SOME OF THESE PRODUCT LINE CHANGES REFLECT GENUINE AND POWERFUL CONSUMER DEMAND; OTHERS ATTEMPT TO CREATE IT.

IN THE HALF CENTURY SINCE 1960, OUR GLOBAL POPULATION HAS MORE THAN DOUBLED FROM 3 BILLION TO THE 7 BILLION LEVEL PROJECTED TO BE REACHED THIS YEAR<sup>8</sup>. IF WE THINK ABOUT THE EFFECT THIS HAS HAD ON CORPORATE PRODUCTION/PROFIT AND CONSUMER PURCHASING AROUND THE WORLD, IT BECOMES EVIDENT THAT POPULATION GROWTH'S IMPACT IS UNIQUELY POWERFUL.

REGIONAL AND NATIONAL DEMOGRAPHIC DIFFERENCES FAVOR VARIATIONS IN POPULATION GROWTH RATES. SINCE VALID RECORDS HAVE BECOME AVAILABLE, OUR NATIONAL RATE HAS PROBABLY TRAILED THE GLOBAL AVERAGE, BUT OUR NUMBERS HAVE BEEN DISTORTED BY THE STEADY ADDITION OF MIGRANTS TO OUR DOMESTIC PROCREATIONAL PROCESS.

OVERPOPULATION IS A DIRTY WORD IN THE BOARDROOMS OF CORPORATE AMERICA. IF SPOKEN AT ALL, IT IS DONE SO QUICKLY AND QUIETLY, AND THE SUBJECT IS IMMEDIATELY CHANGED. THE TROUBLE WITH AVOIDANCE AS A POLICY IS THAT IT PRECLUDES BEING PREPARED FOR CONSEQUENCES. ITS OPPOSITE IS EDUCATION WHICH CAN, ADMITTEDLY, PROVE TO BE CUMBERSOME OR EXPENSIVE, OR BOTH.

IN THE MATTER OF OVERPOPULATION, A POLICY OF AVOIDANCE IS AN ASSURANCE OF MORE, NOT LESS, PHYSICAL, ECONOMIC AND SOCIAL DAMAGE.

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THE RESPONSE TO OVERPOPULATION BY OUR GOVERNMENT STRUCTURE IS SO LACKING IN RESPONSIBILITY THAT IT COULD WELL PASS FOR BETRAYAL; AND GOVERNMENT, AS IT IS USED HERE, INCLUDES OUR EXECUTIVE AND LEGISLATIVE BRANCHES AND OUR JUDICIAL SYSTEM WHICH HAS TOO OFTEN FAVORED LOCAL LANGUAGE, REASON OR INTERESTS OVER THOSE OF OUR CONSTITUTION.

BUT, NOTWITHSTANDING JUDICIAL AND EXECUTIVE ERROR, IT IS UPON OUR ELECTED CONGRESS THAT THE GREATEST FAULT FOR NOT RECOGNIZING OR TAKING ACTION ON OVERPOPULATION MUST FALL.

THE WAY OUR CONGRESS FUNCTIONS HAS BECOME MORE FAULTY IN TIME. IT HAS BECOME SLOW, UNWIELDY AND LESS DEMOCRATIC MUCH OF THE BLAME FOR WHICH CAN BE ATTRIBUTED TO ITS COMMITTEE SYSTEM. IT'S POSSIBLE THAT

THIS SYSTEM, WHEN FIRST CONCEIVED AND ADOPTED, WAS SEEN AS A WAY OF PROVIDING TIMELY, DEMOCRATIC ACTION, BUT THE CONCEPT OF “TIMELY” HAS BEEN CHANGED BY OUR MODERN COMMUNICATION/COMPUTER TECHNOLOGY.

BUT IT IS THE DEMOCRATIC ASPECT OF OUR COMMITTEE SYSTEM THAT HAS SUFFERED MOST, AS ACTION CAN BE BLOCKED OR DELAYED BY POWERFUL COMMITTEE CHAIRMEN OR MEMBERS WITH LITTLE OR NO ATTENTION TO WHAT MIGHT EMERGE AS A NATIONAL INTEREST.

THE TIME THAT ANY PROPOSED ITEM SPENDS IN COMMITTEE WITHOUT ACTION UPON IT ALLOWS ITS SPONSORS TIME TO DISCUSS IT AND TO TRY TO ATTRACT THE NECESSARY SUPPORT FOR ITS PASSAGE. BUT THIS TIME WORKS BOTH WAYS AND IT ALLOWS THE LOBBYISTS AND SPECIAL INTERESTS TO DEFINE THE FORM OF THEIR RESISTANCE AND TO BEGIN THE PROCESS OF OFFERING CAMPAIGN CONTRIBUTIONS, ENCOURAGING CONSTITUENT CORRESPONDENCE AND REWRITING THOSE PARTS OF THE BILL THAT ARE OBJECTIONABLE TO THEIR CORPORATE CLIENTS.

THIS IS NOT THE WAY IT SHOULD BE, BUT IT’S THE WAY IT IS. OVERPOPULATION IS AN ISSUE SO POTENTIALLY BROAD IN ITS REACH AND OVERWHELMING IN ITS CONSEQUENCES THAT THE NATIONAL INTEREST COULD NOT HELP BUT BE SERVED BY EXPOSING IT TO CONGRESSIONAL DISCUSSION AND/OR THE PUBLIC OPINION THAT WOULD FOLLOW. THIS NEED NOT INVOLVE THE FULL CONGRESS, BUT A JOINT HOUSE/SENATE COMMITTEE COULD BE FORMED TO CONDUCT AN INITIAL INQUIRY AND PREPARE A PRELIMINARY REPORT WHICH COULD THEN BE MADE AVAILABLE TO THE MEDIA AND TO ALL MEMBERS OF THE CONGRESS.

THE STEP OF “GOING PUBLIC” WITH A MATTER AS DIFFUSE AS OVERPOPULATION IS ONE THAT THREATENS ESTABLISHED POSITIONS. IT CALLS FOR MEMBERS OF CONGRESS TO BECOME INFORMED ABOUT A COMPLEX PROBLEM AND TO MAKE A POLITICAL DETERMINATION OF BOTH NATIONAL AND PERSONAL ADVANTAGE. AND WHATEVER POSITION THEY TAKE, THEY ARE ASSURED OF CONSTITUENT CRITICISM, OFTEN NEITHER REALISTIC NOR FAIR.

WITH TWO SUCH PUBLICLY IMPORTANT GROUPS AS THE RELIGIOUS AND CORPORATE SECTORS OPPOSING ANY ACKNOWLEDGEMENT OF OVERPOPULATION, CONGRESS’ ATTITUDE OF AVOIDANCE TO DATE SEEMS DESTINED TO CONTINUE. THERE ARE JUST TOO MANY VOICES AND TOO MUCH MONEY IN PLAY TO EXPECT OTHERWISE.

THE LAST FORCE WORKING AGAINST POPULATION AWARENESS IN OUR COUNTRY IS LESS SPECIFIC THAN THE OTHERS, AND YET IT IS VERY MUCH A PART OF OUR PRESENT, AND EVEN OUR HISTORICAL, IDENTITY. IT COMES WITH THE FEELING OF “WE HAVE MET THE ENEMY AND HE IS US.”<sup>9</sup>

FROM SPARE BEGINNINGS IN NEW ENGLAND WE SPREAD ACROSS THE CONTINENT, DEVELOPING ITS WEALTH, ENJOYING AND ENCOURAGING POLITICAL FREEDOM AND TRANSFORMING OURSELVES INTO A WORLD POWER. THIS LAST ROLE WAS CONFIRMED BY OUR DECISIVE CONTRIBUTIONS TO TWO GLOBAL WARS AND THEN EXTENDED EVEN FURTHER IN THE WAKE OF THOSE WARS’ DESTRUCTION TO THAT OF SOLE SUPERPOWER.

THIS WAS A TRULY AMAZING PROCESS OVER A BRIEF

PERIOD OF ABOUT FOUR HUNDRED YEARS THROUGHOUT WHICH WE CREATED A UNIQUE CULTURE AND IDENTITY FROM MANY SOURCES AND EXPERIENCES. ONE OF THESE ELEMENTS THAT APPEAR FREQUENTLY IS THE SENSE THAT OUR NATION HAS A SPECIAL DESTINY AND THE ABILITY TO ACHIEVE IT.

THIS SHOWED ITSELF EARLY IN OUR HISTORY IN A RELIGIOUS CONTEXT WHEN SETTLERS AND THEIR LEADERS, BOTH POLITICAL AND CLERICAL, FOSTERED THE IMAGE OF OUR NEWLY GAINED LAND AS “THE NEW EDEN”. THIS HAS BEEN AN ENDURING AMERICAN IMAGE WITH POLITICAL AS WELL AS RELIGIOUS SIGNIFICANCE IN THE WAY WE WERE REFERRED TO AS “THE NEW WORLD”.

AMERICA’S CULTURE IS MADE OF MANY ELEMENTS SOME OF WHICH, WHEN THEY COME TOGETHER, BECOME DEFINING PATTERNS. ONE OF THESE IS OUR OPTIMISM IN FACING CHALLENGE, WHAT IS OFTEN DEEMED OUR “CAN DO” SPIRIT, WHICH WE MAY TRACE BACK TO OUR OPEN SOCIETY, TO OUR “NEW EDEN” DESIGNATION, TO OUR EMPHASIS ON FREEDOM AND TO THE BIBLICAL FOUNDATION OF BEING MADE IN GOD’S IMAGE AND ORDERED TO MULTIPLY AND EXERCISE DOMINION.

THIS CULTURE OF DIVINE FAVOR AND INVINCIBILITY HAS PROVED MOSTLY ADVANTAGEOUS IN SETTLING OUR CONTINENT AND DEFENDING DEMOCRACY, BUT WE ARE ENTERING A VASTLY DIFFERENT TIME.

RATHER THAN FIGHTING GODLESS FASCISTS AND COMMUNISTS OUR MOST DETERMINED OPPOSITION NOW COMES FROM A RELIGION WITH THE SAME ORIGINS AS OURS AND WHICH CLAIMS DIVINE BACKING WITH STRENGTH AND CONVICTION EQUAL TO OURS.

“BARRING MASSIVE DIFFERENCES IN MORTALITY, THE MORE FERTILE SUPPLANT THE LESS FERTILE”.

— LINDSEY GRANT VIA  
NEGATIVE POPULATION GROWTH, Inc. 6/11

THE MUSLIM FAITH IS WORLD-WIDE, AS IS OURS, BUT HARBORS SOME BELIEFS AND LAWS THAT VIOLATE OUR SENSE OF HUMANITY. THEY ARE A HIGH FERTILITY RELIGION AND ARE ALSO COMMANDED TO “BE FRUITFUL AND MULTIPLY”, ALTHOUGH IN A MORE MILITANT WAY.

OVER THE COURSE OF OUR HISTORY OUR SENSE OF EXCEPTIONALISM PROVIDED US WITH CONFIDENCE THAT GENERALLY WORKED TO OUR ADVANTAGE. TODAY, IT CAN SPILL OVER INTO A KIND OF UNNECESSARY SUPER STATUS, OR ENTITLEMENT, THAT GOES BEYOND QUIET CONFIDENCE AND THAT APPEARS IN THE FORM OF GRATUITOUS CHANTS SUCH AS “WE’RE #1” OR “USA, USA, USA” AT SPORTS EVENTS, POLITICAL MEETINGS, PUBLIC RALLIES, ETC.

AS WORLD POPULATION GROWS AND FOOD SUPPLIES SHRINK, ALL OF US WILL BE SUBJECTED TO PRESSURES WE HAVE NOT KNOWN BEFORE. THE EARLY BATTLES IN OUR WORLD FOOD CONFLICTS WILL BE FOUGHT LOCALLY — A DROUGHT HERE, A FAMINE THERE, AND A DISEASE EPIDEMIC ELSEWHERE — BUT BECAUSE OF VOLATILE PRICES AND THE NEED TO FEED MORE WITH LESS, EVEN ISOLATED AND MINOR NATURAL DISLOCATIONS WILL HAVE THE POWER TO DO DISPROPORTIONAL DAMAGE TO

THE WORLD'S DISTRIBUTION AND PRICING MECHANISMS.

WE MUST BE AWARE OF THE TRENDS AND POSSIBILITIES THAT HAVE GATHERED IN THE WAKE OF OVERPOPULATION AND ARE LIKELY TO ASSERT THEMSELVES UNDER THE LAW OF SUPPLY AND DEMAND WITH BROAD IMPARTIALITY AND NO RESPECT FOR PRIOR STATUS.

THIS, OF COURSE, REFERS CLEARLY TO THE WORLD'S WEALTHY AND DEVELOPED NATIONS AND MOST SPECIFICALLY TO OUR OWN COUNTRY WHERE, OVER THE PAST HALF CENTURY, OUR MILITARY/INDUSTRIAL COMPLEX HAS LED US TO ENGAGE IN ACTS OF HUBRIS AND IMPERIALISM THAT CONTINUE TO POSE MORE QUESTIONS THAN THEY ANSWER. WE WILL NEED BETTER LEADERS AND BETTER ATTITUDES.

ANY CONTEMPLATION OF FUTURE FOOD AND POPULATION CONFLICTS MUST INCLUDE THE ROLE THAT WILL BE PLAYED BY THE UN. THE POSSIBILITY OF REAL LEADERSHIP EXISTS, BUT IT IS SO OFTEN DIVIDED BY ETHNIC, RACIAL, CULTURAL AND RELIGIOUS INTERESTS THAT SOMETHING AS BROAD AND BASIC AS A FOOD/POPULATION ISSUE MIGHT BE BEYOND ITS CAPABILITY FOR ACTION. IT MIGHT DESCEND INTO IRRELEVANCE OR FUNCTIONAL FAILURE OR JUST BE OVERTAKEN BY EVENTS, AND YET IT'S A VERY LARGE, POWERFUL AND RICH BUREAUCRACY WITH A HUGE STAFF DEDICATED TO THEIR OWN SURVIVAL, ENJOYS STRONG THIRD WORLD SUPPORT AND MAY LAST WELL BEYOND ITS STATE OF EFFECTIVENESS.

THE POSSIBILITIES FOR INTERACTION AND OVERREACTION IN POPULATION/FOOD MATTERS ARE MANY AND AMERICA WILL HAVE TO BE AWARE OF RISKS WE HAVE NOT FACED BEFORE. IN THIS CONTEXT OF SHARED GLOBAL CRISIS WE WOULD BE BETTER SERVED BY LESS, NOT MORE, EXCEPTIONALISM. AND PERHAPS ALL THREE OF THE DESERT RELIGIOUS MIGHT RETHINK THE WISDOM AND MEANING OF "BE FRUITFUL AND MULTIPLY" IN TERMS OF CURRENT UNFOLDING EVENTS AND POPULATION MOMENTUM.

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"THE WORLD IS INCURRING A VAST WATER DEFICIT — ONE THAT IS LARGELY INVISIBLE, HISTORICALLY RECENT, AND GROWING FAST."

— WORLD ON THE EDGE  
BY LESTER R. BROWN

CROPS AND LAND ARE NOT THE ONLY ELEMENTS THAT WILL BE AFFECTED BY THE COMING POPULATION EXPLOSION. WATER, TOO, WILL CAUSE SIGNIFICANT CHANGES IN THE WAY WE USE IT. IT IS THE ONE ESSENTIAL-FOR-LIFE ELEMENT WHICH WE MUST HAVE AND FOR WHICH THERE ARE NO SUBSTITUTES. IT WILL BE COVERED LATER IN OUR ISSUE DEVOTED TO THE ENVIRONMENT.

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THE INTERCONNECTION OF FOOD/POPULATION WITH OUR LIVES IS SO FREQUENT AND COMPLETE THAT WE INCLUDE HERE A MODEL OF HOW IT MIGHT PLAY OUT FOR ONE FARMER.

WE ARE ANTICIPATING AN INCREASE IN WORLD

POPULATION FROM THE PRESENT 7 BILLION TO 10 BILLION BY 2100, OR 43%. IF A COMMUNITY'S POPULATION INCREASES BY 43%, THEN PRESUMABLY ITS DEMAND FOR FOOD WILL DO LIKEWISE, AS WILL ALSO ITS NEED FOR EDUCATION, HOUSING, PARKING, ROADS, HEALTH CARE, UTILITIES, ADMINISTRATION, ETC. THE TOWN WILL HAVE TO EXPAND PHYSICALLY AND CAN ONLY DO SO BY NIBBLING AWAY, A BITE HERE AND A BITE THERE, AT THE LAND THAT SURROUNDS IT. IF WE USE OUR STARTING TIME AS AN INDEX OF 100, THEN BY THE END OF THE CENTURY POPULATION AND DEMAND WILL BE AT THE 143 LEVEL.

CROP LAND AND SUPPLY, HOWEVER, WILL HAVE BEEN REDUCED BY 43% TO A 57 INDEX FIGURE. NOT ALL CAUSES AND EFFECTS WORK THIS PRECISELY AND MANY FACTORS, BOTH PREDICTABLE AND NOT, PLAY A PART. WHAT THIS MODEL SHOWS VERY CLEARLY IS THE WHIPSAW EFFECT OF RISING DEMAND AND DECREASING SUPPLY. IN THE END, THE DIFFERENCE BETWEEN THE TWO FIGURES IS SUBSTANTIAL AND SUGGESTS THAT THEIR PRESSURE ON OUR PRICE MECHANISMS WILL BE FELT THROUGHOUT OUR MARKET STRUCTURE.

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$$H = P \times A \times T$$

NATIONAL GEOGRAPHIC MAGAZINE IN ITS MARCH 11, 2011 ISSUE CARRIED AN ARTICLE IN WHICH IT ANALYZED THE IMPACT ON OUR SOCIETY OF WHAT IT SAW AS THE THREE MAJOR FORCES OF OUR TIME — POPULATION, AFFLUENCE AND TECHNOLOGY — WHICH IT EXPRESSED IN THE EQUATION I(IMPACT) = P (POPULATION) X A (AFFLUENCE) X T (TECHNOLOGY). THE FIGURES BELOW GIVE SOME EVIDENCE OF THIS RELATIONSHIP FROM 1900 TO THE PRESENT AND ESPECIALLY THE RATE OF THEIR GROWTH:

	1900	1950	2011	% CHANGE 1900-2011
POPULATION (WORLDWIDE)	1.8 BILLION	2.5 BILLION	7 BILLION	+289
AFFLUENCE (WORLD GDP)	\$2 TRILLION	\$5.3 TRILLION	\$55 TRILLION	+2,650
TECHNOLOGY (PATENT APPLICATIONS)	141,000	412,000	1.9 MILLION	+1,248

THERE IS NO POINT IN CARRYING OUT THE MULTIPLICATION FOR ANY YEAR, AS THE TOTALS WOULD BE SO LARGE AS TO BE MEANINGLESS. WE SIMPLY LACK THE MEANS TO RELATE TO THEM. REMEMBER, A BILLION IS A THOUSAND TIMES A MILLION AND A TRILLION IS A THOUSAND TIMES A BILLION, OR A MILLION TIMES A MILLION. AT THESE LEVELS NUMBERS BECOME INCREASINGLY ABSTRACT AND ARE CERTAINLY BEYOND THE COMPREHENSION OF OUR POLITICAL "LEADERS". BUT WE CAN READILY SEE THAT VERY POWERFUL FORCES ARE AT WORK, AND POPULATION IS ONE OF THEM.

THE MOST IMPORTANT MESSAGE CARRIED BY THESE FIGURES IS NOT THEIR SIZE OR RATE OF GROWTH, BUT RATHER THEIR NATURE, THEIR ORIGINS. AFFLUENCE AND TECHNOLOGY ARE BOTH PRODUCTS OF THE WORLD OF COMMERCE. THEY DERIVE FROM MAN'S HANDS AND EFFORTS. THEY ARE SUBJECT

TO BUSINESS CYCLES AND MAN'S JUDGMENTS ABOUT THEM AND THE WORLD HE INHABITS.

WORLD POPULATION DOES NOT DEPEND ON MARKET JUDGMENTS. IT IS BIOLOGICALLY, NOT COMMERCIALY, ORDERED AND IS THE CONSEQUENCE OF GLOBAL ACTIONS. THE SPECTACULAR GROWTH IN AFFLUENCE SHOWN HAS A POPULATION COMPONENT, HOWEVER, IN THAT MARKETS ARE SIGNIFICANTLY DETERMINED BY CONSUMPTION WHICH IN TURN IS A FUNCTION OF POPULATION.

THE GROWTH FOR ALL THREE CATEGORIES WAS MUCH HIGHER IN THE SECOND PHASE FROM 1950 TO 2011 WHEN MILITARY TECHNOLOGY AND ITS SPIN-OFFS BECAME AVAILABLE AND OUR DOLLAR'S VALUE WAS LOWERED BY INFLATION AND OVER-SPENDING.

LOOKING AHEAD TO THE NEXT DECADE, FEW ECONOMISTS, IF ANY, FORESEE A MAJOR "BOOM". RATHER, MOST PREDICTIONS ENVISION A FLAT ECONOMY AS WE ATTEMPT TO DISTANCE OURSELVES FROM THE RECENT EXCESSES OF THE HIGH TECH, BANKING/CREDIT AND REAL ESTATE/HOUSING SECTORS OF THE MARKET.

"FLAT" IS A WORD UNKNOWN TO POPULATION SINCE THE BEGINNING OF THE NINETEENTH CENTURY AND THE IR. WHATEVER UPS AND DOWNS APPEAR IN OTHER MARKET FORCES WILL HAVE NO EFFECT UPON POPULATION. IT IS A FORCE APART, AND IT IS RELENTLESS. IT HAS THE POWER TO DO AWAY WITH THE RESULTS OF MAN'S PRIOR THOUGHT AND PROGRESS, AND IT IS INCOMPREHENSIBLE TO OUR PRESENT "LEADERS", ALTHOUGH IT IS A TALE BEING TOLD IN MANY LANGUAGES.

IT HAS ECONOMIC, BIOLOGICAL AND NATURAL RESOURCE TIPPING POINTS THAT WE IGNORE AT CONSIDERABLE PERIL, FOR THEY HAVE THE ABILITY WHEN REACHED, TO RESET THE CLOCKS THAT MEASURE AND RECORD OUR PRIORITIES AND ACCOMPLISHMENTS.

ELIZABETH KUBLER-ROSS DESCRIBED DENIAL AS ONE OF OUR FIRST AND KEY REACTIONS TO FACING PERSONAL DEATH. IT IS EQUALLY AT HOME IN OUR POLITICAL ESTABLISHMENT. THERE, DENIAL, EVEN OF EVIDENT TRUTH, OCCURS ON SUCH A BROAD SCALE THAT IT HAS BECOME A FORM OF MASS HYPNOSIS WHICH THOSE IN OUR NATIONAL POLITICAL LIFE MUST ACCEPT AND EMBRACE.

IN ANCIENT LEGENDS SUCH A SPELL COULD BE BROKEN BY A YOUNG KNIGHT OF EXTRAORDINARY PURITY AND ABILITY WHO IS UNFORTUNATELY NOT AVAILABLE TO US. WE MAY HAVE TO FASHION ONE OF OUR OWN, BUT WE MAY NOT REMEMBER HOW NOR HAVE OUR FORMER TOOLS.

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## CONNECTIONS

WHEN THE IR COMMENCED WE LIVED IN A WORLD IN WHICH THE MOST WIDELY USED OIL WAS SPERM WHALE OIL, AS IT WAS THE MAIN SOURCE OF ILLUMINATION. OTHER POWER PROVIDING COMBUSTION SOURCES WERE COAL AND WOOD WHICH ENABLED THE STEAM ENGINE.

ALL THIS CHANGED A BRIEF FIFTY YEARS LATER WHEN, IN 1859, EDWIN DRAKE SUCCESSFULLY DRILLED AND

OPERATED THE FIRST COMMERCIAL OIL WELL AND WE ENTERED THE PETROLEUM AGE. IN A CENTURY AND A HALF, THROUGH AN AMAZING SEQUENCE OF PRODUCTION, MARKETING AND TECHNOLOGICAL PROCESSES WE HAVE MOVED THROUGH THE AGES OF OIL, CHEAP OIL AND BIG OIL, AND ARE EITHER APPROACHING OR EXPERIENCING PEAK OIL, THAT POINT IN TIME AFTER WHICH, FOR ONE REASON OR ANOTHER, OIL PRODUCTION/ CONSUMPTION WILL DECLINE.

PRETTY MUCH EVERYTHING IN OUR MODERN PERIOD THAT COMMENCED IN THE BEGINNING OF THE 20TH CENTURY WITH THE DEVELOPMENT OF AUTOMOBILES AND AIRCRAFT HAS BECOME INCREASINGLY DEPENDENT UPON THE CHEMISTRY AND PHYSICS OF OIL.

"RISING OIL PRICES MEAN RISING FOOD PRICES."

— WORLD ON THE EDGE  
BY LESTER R. BROWN

THIS TOTAL RELIANCE HAS PROVIDED INNUMERABLE BENEFITS TO INDIVIDUALS, NATIONS AND OUR GLOBAL COMMUNITY, BUT IT HAS COMMANDED AN INITIALLY SMALL, BUT EVER LARGER, PRICE. IT HAS ALTERED OUR ECONOMIC AND POLITICAL VIEWS OF WHAT IS REAL AND NECESSARY, AND WHAT WE CAN AFFORD AND CONTROL.

TODAY THE PRICE AND POLITICS OF OIL CAN CHANGE INSTANTLY AROUND THE WORLD, AND WE DO NOT CONTROL THEM. QUITE TO THE CONTRARY, THEY CONTROL US. DOES THIS SOUND FAMILIAR? IT SHOULD. IT IS THE SAME SITUATION WE FACE WITH FOOD — RISING POPULATION, DIMINISHING RESOURCES AND THE INEVITABLE UPWARD PRESSURE ON PRICES. WE THINK WE CONTROL THE SPACE WE'RE IN. THIS IS A DELUSION, FOR, AS PRESSURES INCREASE, IT WILL SHAPE US.

THE EFFECT OF THIS COMBINED DESCRIPTION OF OUR PRIMARY FOOD AND FUEL SUPPLIES, WHETHER FOR A BRIEF OR EXTENDED PERIOD, WILL CONFRONT ALL NATIONS AND THE GLOBAL ECONOMY WITH DIFFICULT CHOICES VERY FEW OF WHICH SEEM ACCEPTABLE TODAY.

LOOKING AHEAD TO THE END OF THE PRESENT CENTURY, THE CRUCIAL DIFFERENCE BETWEEN SURVIVAL AND CHAOS WILL DEPEND UPON WHETHER WE CAN UNDERTAKE A MANHATTAN PROJECT TYPE OF EFFORT TO DEVELOP THE NEW POLITICAL AWARENESS AND LEADERSHIP THAT WILL BE REQUIRED HERE AND THROUGHOUT THE WORLD. IF THEY CAN'T, THE TIME AND FOOTPRINTS OF OUR AGE WILL BE REMOVED BY THE NEXT RECEDING TIDE.

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OUR VAST USE OF FOSSIL FUELS HAS RAISED OUR ATMOSPHERE'S CARBON DIOXIDE (CO<sub>2</sub>) LEVEL AND OUR PLANET'S SURFACE TEMPERATURE. THESE CHANGES HAVE PLAYED AN IMPORTANT PART IN DESTABILIZING OUR WEATHER PATTERNS. INCREASED TEMPERATURE IN THE GULF OF MEXICO, FOR EXAMPLE, IS STRONGLY SUSPECTED AS BEING A MAJOR CONTRIBUTOR TO THE GREATER NUMBER AND SIZE OF STORMS THAT HAVE RECENTLY DEVASTATED SOME OF OUR SOUTHERN, WESTERN AND MIDWESTERN STATES.

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WATER SHORTAGES RESULTING FROM NATURAL SUPPLY DEPLETION EXIST THROUGHOUT THE WORLD AND ARE INCREASING IN NUMBER AND SEVERITY. THEIR EFFECT ON WORLD AGRICULTURE HAS BEEN AND WILL CONTINUE TO BE PRONOUNCED. THE ARIDITY CAUSED BY LACK OF WATER, WHEN COMBINED WITH WIND, CAUSES TOPSOIL LOSS FOLLOWED BY DESERTS OR DUST BOWLS.

RIVERS, TOO, ARE LOSING WATER AND SHRINKING. THE LARGEST RIVER IN ASIA, THE YANGTZE, RECENTLY SUFFERED A SEVERE DROUGHT THAT LED CHINESE AUTHORITIES TO CLOSE IT TO TRAFFIC IN SEVERAL PLACES WHERE THE H<sub>2</sub>O LEVEL HAD FALLEN ENOUGH TO STRAND SHIPS.

IT TAKES A THOUSAND TONS OF H<sub>2</sub>O TO PRODUCE A TON OF WHEAT AND WORLD GRAIN PRICES HAVE REACHED RECORD LEVELS. IF PRICES AND POPULATION CONTINUE TO INCREASE, IT IS INEVITABLE THAT THEY WILL INFLUENCE WORLD POLITICS.

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GREAT WEALTH AND POWER ARE PRIVILEGES. THEIR ACQUISITION USUALLY INVOLVES A HIGH DEGREE OF CHANCE, MOST EVIDENT IN THE ACCIDENT OF MONARCHICAL BIRTH, AND THEY ARE CHARGED WITH RESPONSIBILITIES, THE MOST NOTABLE BEING LEADERSHIP. FOLLOWING THE WIDESPREAD ECONOMIC AND PHYSICAL DESOLATION OF WWII, THE FOCUS OF THE WORLD'S ECONOMIC, POLITICAL AND MILITARY STRENGTH WAS SHIFTED TO THE USA AND WE HAVE CLAIMED FOR OURSELVES LEADERSHIP IN A MULTITUDE OF ROLES IN MANY OF WHICH WE HAVE FAILED. OUR PRESENT CIRCUMSTANCES REQUIRE A DEGREE OF FIRMNESS AND FAIRNESS IN OUR LEADERSHIP THAT UNFORTUNATELY IS NOT THERE, AS THE STAKES HAVE RISEN SHARPLY AND ARE CONTINUING TO DO SO.

OUR CLAIM TO WORLD LEADERSHIP IN FINANCIAL MATTERS IS EQUALLY HOLLOW, AS IN THE POSTWAR PERIOD WE HAVE MADE OUR WAY FROM THE WORLD'S LARGEST CREDITOR TO ITS GREATEST DEBTOR.

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THERE HAS BEEN A PARALLEL PROCESS IN OUR INTERNATIONAL RELATIONS. SHORTLY AFTER WWII THERE WAS A PLAUSIBLE VIEW WITHIN THE FREE WORLD'S FOREIGN AFFAIRS COMMUNITY THAT IT MIGHT BE ENTERING A PAX AMERICANA PERIOD SIMILAR TO THE NINETEENTH CENTURY'S PROLONGED PEACEFUL DOMINANCE BY ENGLAND. IN FACT, JUST THE OPPOSITE IS TRUE, FOR WHILE WE AND OTHERS HAVE MANAGED TO AVOID A MAJOR NUCLEAR WAR, OUR POLICIES HAVE RESULTED IN OUR ENGAGEMENT IN NUMEROUS SMALLER WARS EITHER DIRECTLY OR BY PROXY. IN ALL OF THESE, WHETHER IN THE DEFENSE OR EXTENSION OF SOME REAL OR IMAGINED "INTEREST", POWER OVER THE CHOICE AND CONDUCT OF WAR HAS SHIFTED TO THE EXECUTIVE BRANCH AND EVER LARGER AMOUNTS OF EXTRA-BUDGET EXPENSE HAS BEEN BILLED TO THE U.S. TAXPAYER.

IN THESE MULTIPLE WARS WE HAVE FOUND AN OPPOSITION AS MIXED AS THEIR RESULTS AND FROM WHICH A DISTURBING PATTERN HAS EMERGED. WE PROVIDE FINANCIAL AND MILITARY SUPPORT TO A LOCAL LEADER WHO CLAIMS TO HAVE GOALS CONSISTENT WITH OURS BUT WHO, ONCE INSTALLED IN POWER, USES OUR ASSISTANCE TO CONSOLIDATE HIS ADVANTAGE OVER HIS OPPOSITION, OR TO ELIMINATE IT COMPLETELY.

IN THIS PROCESS HUNDREDS OF MILLIONS, AND

SOMETIMES BILLIONS, OF DOLLARS ARE APPROPRIATED FOR OUR ALLY'S PERSONAL ACCOUNT ENSURING THAT IN THE EVENT OF REGIME CHANGE THERE WILL BE AMPLE FUNDS AVAILABLE FOR A LUXURIOUS "RETIREMENT".

THE RESULT OF THE UN'S AND OUR OWN LEADERSHIP FAILURES IN THE PAST HAS BEEN TO THWART THE REALIZATION OF MANY MUTUAL GOALS. NOW, WE CONFRONT THE EFFECTS OF INCREASING POPULATION, CONSUMERISM, ENERGY DEMAND, SPECIES LOSS AND POLLUTION OF OUR AIR AND WATER SUPPLIES AND OTHERS WITH THE ABILITY TO ALTER, AND PERHAPS DESTROY, HUMAN LIFE ON PLANET EARTH.

THIS IS A POWERFUL STATEMENT THAT WILL PROBABLY SHOCK MOST READERS. IT IS NOT INTENDED IN A "SHOCK", OR SENSATIONALIST WAY, BUT TO EXPOSE THE UNERRING ARITHMETIC OF THE PAST AND WHAT WE MIGHT ANTICIPATE FROM ITS CONTINUATION. WE ARE PART OF A TREND, AND TRENDS OFFER CLUES AND DELIVER MESSAGES WHICH BECOME CLEARER AS THEY PROGRESS.

## THE WAY AHEAD

POPULATION IS THE COMMON DENOMINATOR OF ALL OUR MAJOR ISSUES. AND YET, WE DON'T MENTION IT, HAVE A POLICY FOR IT OR ALLOW OURSELVES TO UNDERSTAND IT.

THE SITUATION IN WHICH AMERICA FINDS ITSELF IS SO SERIOUS THAT FEW OPTIONS ARE AVAILABLE. THOSE THAT ARE WILL CHALLENGE US IN NEW AND DIFFERENT WAYS, AND WE HAVE NO CHOICE OTHER THAN TO PURSUE THEM.

THE FIRST AND MOST IMPORTANT IS TO FORCE OUR "LEADERS", NOTABLY CONGRESS AND THE MSM, TO INFORM THEMSELVES AS BEST THEY CAN AND TO COMMENCE AN OPEN DIALOGUE THAT WILL BEGIN THE PROCESS OF ENLIGHTENING THE PUBLIC.

FOR MEMBERS OF CONGRESS, THIS WILL INVOLVE THE CONSIDERABLE RISKS OF TAKING POSITIONS OPPOSED BY THEIR CORPORATE LOBBYISTS AND BY FAVORING A SUBJECT TO WHICH MANY OF THEIR CONSTITUENTS CANNOT RELATE.

OUR GOVERNMENT WILL HAVE ANOTHER ROLE BEYOND THAT OF CONGRESS. ONCE ITS DOMESTIC INFORMATIONAL EFFORT IS UNDERWAY, IT SHOULD REACH OUT TO ELEMENTS IN OTHER GOVERNMENTS, BOTH IN PRIVATE DIPLOMACY AND AT THE UN, TO SWING INTERNATIONAL OPINION TO MOVE DECISIVELY IN THE DIRECTION OF INFORMED AND COLLECTIVE SELF-PRESERVATION.

THIS WILL BE A MASSIVE UNDERTAKING SURE TO AROUSE OPPOSITION FROM STATUS QUO BACKERS IN THE COMMERCIAL, RELIGIOUS AND POLITICAL SECTORS AS WELL AS CONSPIRACY THEORISTS AND THE GENERAL PUBLIC. BUT TRUTH, LIKE FIRE OR WATER, FINDS ITS OWN WAY OF SPREADING.

AT THIS PARTICULAR TIME AND PLACE IN HISTORY, SUCCESS IN ESTABLISHING THE KIND OF AWARENESS NECESSARY FOR OUR AWAKENING IS DIRECTLY PROPORTIONAL TO THE COOPERATION THAT CAN BE OBTAINED FROM THE MSM BOTH HERE AND ABROAD. IF OUR GOVERNMENT AND MEDIA CAN AGREE TO A COMMON GOAL AND HARNESS THEIR EFFORTS TOGETHER TO ACHIEVE MAXIMUM RESULTS, WE MIGHT BE ABLE TO CREATE

ANOTHER MANHATTAN PROJECT BREAKTHROUGH IN DEALING WITH THE FORCES THAT WE HAVE CREATED AND THAT NOW THREATEN US. IF SUCH COOPERATION IS NOT FORTHCOMING, OUR TASK WILL BE IMMEASURABLY MORE DIFFICULT AND LENGTHY, BUT STILL NECESSARY AND WORTH THE EFFORT.

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THE OBSTACLES ARE HUGE. WE ARE STARTING WITH ADVANCING A TOPIC AND PROGRAM WHICH HAS SOME SUPPORT IN THE SCIENTIFIC AND ACADEMIC COMMUNITIES, BUT NONE IN CONGRESS. AT NO POINT IN OUR LAST FIVE PRESIDENCIES GOING BACK TO 1980 (REAGAN) HAS ANY MEMBER OF THE HOUSE OR SENATE, OR THE PRESIDENT IN A STATE OF THE UNION ADDRESS, CALLED ATTENTION TO THE INCREASINGLY SERIOUS AND NUMEROUS THREATS TO US AND TO OTHERS POSED BY UNCONTROLLED POPULATION GROWTH AND ITS INTERRELATED SIDE EFFECTS.

THIS IS A TRUE DR. FRANKENSTEIN AND THE MONSTER MOMENT FOR OUR HUMAN SOCIETY. THE POPULATION GROWTH PROBLEM IS ENTIRELY OF OUR OWN MAKING AND WE HAVE LOST CONTROL OF IT.

OVERPOPULATION IS NOT A FORCE DIRECTED BY SOME MALEVOLENT, EXTERNAL AGENCY, BUT IT DOES HAVE THE UNERRING CERTAINTY AND MATHEMATICAL MOMENTUM OF GEOMETRIC INCREASE. WHATEVER IT LACKS IN PURPOSE, IT MORE THAN MAKES UP FOR IN ITS POWER TO REARRANGE AND DESTROY THE PATTERNS OF OUR LIVES. IT MAY EVEN BE GREATER THAN WE KNOW. AND IT IS CERTAINLY LATER THAN WE THINK.

## EPILOGUE

IN THE LAST FIVE HUNDRED YEARS OUR HUMAN SOCIETY HAS BEEN ABLE TO GREATLY IMPROVE THE CONDITIONS IN WHICH WE LIVE, BUT IN DOING SO WE HAVE DISTURBED KEY CHEMICAL AND PHYSICAL RELATIONSHIPS BETWEEN NATURE'S PARTS UPON WHICH WE MUST DEPEND FOR OUR SURVIVAL. ONE SUCH RELATIONSHIP IS THE AMOUNT OF CARBON DIOXIDE IN OUR ATMOSPHERE WHICH NOW MEASURES ABOUT 387 PARTS PER MILLION. THIS IS SIGNIFICANTLY ABOVE BOTH THE 350 PPM CURRENTLY CONSIDERED HIGH BUT ACCEPTABLE AND OUR PRE-INDUSTRIAL LEVEL OF 280 PPM. IT IS ANTICIPATED, HOWEVER, THAT PRESENT MOMENTUM WILL DRIVE THE CO<sub>2</sub> COUNT TO 400 PPM BY 2020 EVEN IF WE TAKE ACTION PROMPTLY.<sup>10</sup>

THERE IS GROWING OPINION THAT HUMAN INDUSTRIAL ACTIVITY IS THE PRIMARY CAUSE FOR THIS UPWARD TREND; OTHERS REJECT THAT INTERPRETATION. IT MAY OR MAY NOT BE CORRECT, BUT WHAT IS EVIDENT IS THAT IN THE MORE RECENT YEARS OF OUR HISTORY OUR NEEDS, ACTIVITIES, NUMBERS, TECHNOLOGIES AND ATTITUDES HAVE GREATLY CHANGED THE WORLD WE LIVE IN, AND THAT, AS THIS CHANGE INTENSIFIES, SO DO ITS CONSEQUENCES.

THE DENIAL MET BY THOSE WHO SEEK TO ENGAGE THIS PROBLEM IS DANGEROUS. IT IS VERY MUCH PART OF AN "IGNORANCE IS BLISS" WAY OF THINKING AND ACTING. IGNORANCE MAY CERTAINLY BE SUSTAINABLE, BUT BLISS IS NOT, AS EVENTUALLY REALITY WILL INTRUDE. BUT, WHEN DEALING

WITH MOVING FORCES OF MANY PARTS AND GREAT POWER, ACCURATE PREDICTION OF HOW, WHERE AND WHEN REALITY WILL MAKE ITSELF KNOWN IS NOT POSSIBLE.

THE MOST IMPORTANT STEP WE CAN TAKE NOW AS INDIVIDUALS, AS A NATION OR AS A GLOBAL SOCIETY IS TO ALERT OURSELVES TO THE EXISTENCE OF THE OVERPOPULATION PROBLEM AND TO RECOGNIZE ITS GATHERING POWER AND THE POTENTIAL STRENGTH AND EXTENT OF ITS CONSEQUENCES. THE REFUSAL OF OUR MEDIA AND GOVERNMENT TO DO THIS IS A COMPLETE ABDICATION OF THEIR PUBLIC RESPONSIBILITIES.

FOR THE PAST TWO YEARS THIS WRITER HAS WORKED WITH AUTHOR/TEACHER FROSTY WOOLDRIDGE AND A GROUP OF EMINENT PROFESSIONALS FROM THE WORLDS OF SCIENCE, ACADEMIA, POLITICS AND COMMERCE TO CALL THE ISSUE OF OVERPOPULATION TO THE ATTENTION OF OUR GOVERNMENT AND MSM. THEIR NAMES AND CONTACTS ARE LISTED ON THE NEXT PAGE.

WE HAVE SENT OUT LETTERS, INFORMATION KITS AND REQUESTS TO DEBATE/DISCUSS POPULATION TO PRINT MEDIA THROUGHOUT THE COUNTRY; AND ALSO TO THE PRODUCERS/DIRECTORS OF EVERY MAJOR BROADCAST NEWS OR COMMENTARY PROGRAM AND TO THEIR STATION MANAGERMENTS. NONE HAS RESPONDED.

MR. WOOLDRIDGE IS ABLE TO BRING AN ABSOLUTELY UNIQUE PERSPECTIVE TO THE GLOBAL POPULATION PROGRAM, AS HE HAS TRAVELED BY BICYCLE ACROSS SIX OF OUR PLANET'S SEVEN CONTINENTS. HIS OPINIONS ORIGINATE FROM ON THE GROUND MEETINGS AND FACE-TO-FACE DISCUSSIONS, NOT FROM A NETWORK ANCHOR DESK IN A DOWNTOWN HIGH-RISE OFFICE BUILDING.

THE SCOPE OF DENIAL IS WIDER THAN WE EVER ANTICIPATED. WE HAVE OFFERED A SMALL PANEL OF THREE OR FOUR EXPERTS FROM THE LIST BELOW FOR DISCUSSION TO BE FOLLOWED BY A STUDENT/FACULTY Q AND A SESSION TO STATE AND PRIVATE COLLEGES AND SECONDARY SCHOOLS, ALWAYS WITH THE BELIEF THAT A JOINT FACULTY AND STUDENT EXPOSURE WOULD PROVIDE MAXIMUM BENEFITS FOR ALL INVOLVED. ONE THREE-LINE NOTE DECLINING INTEREST WAS THE ONLY ANSWER.

THE PEOPLE BELOW REPRESENT DIFFERENT DISCIPLINES; THEY SUBSCRIBE TO DIFFERENT THEORIES; AND THEY USE DIFFERENT CALCULATIONS AND NUMBERS. BUT THEY ARRIVE AT A SHARED VIEW OF OVERPOPULATION'S THREAT TO OUR HUMAN SOCIETY, ONLY TO PERHAPS DIFFER AGAIN ON THE BEST WAY TO TAKE REMEDIAL ACTION.

THE BREADTH OF THEIR ANALYSIS AND CONCLUSIONS IS INSPIRING. WOOLDRIDGE, FOR INSTANCE, A NATIVE OF MI AND NOW A RESIDENT OF CO, WRITES CLEARLY AND CONFIDENTLY OF THE IMPACT ON OUR COUNTRY OF INCREASING OUR POPULATION BY 100 MILLION BEFORE MID-CENTURY IN THE NEXT 100 MILLION AMERICANS<sup>11</sup>.

THE VARIETY AND QUALITY OF THOUGHT OFFERED BY THE GROUP BELOW IS UNFORTUNATELY NOT AVAILABLE IN OUR GOVERNMENTAL, RELIGIOUS, EDUCATIONAL, COMMERCIAL OR MEDIA INSTITUTIONS. BUT SOME DAY, IF WE ARE GIVEN TIME, A SINGLE MIND WILL CHANGE, A VOICE WILL SPEAK DIFFERENT WORDS IN AN URGENT TONE; THEN ANOTHER AND ANOTHER. A

CONVERSION WILL HAVE BEGUN.

WOOLDRIDGE COMPARES OUR PRESENT SITUATION TO THAT OF GALILEO WHEN HE WAS NOT ALLOWED BY THE VATICAN TO SPEAK SCIENTIFIC TRUTH. IT WAS A COMPELLING MOMENT IN HISTORY THEN, AS IT IS NOW. GALILEO'S BATTLE WAS WITH THE TYRANNY OF 17TH CENTURY ITALIAN RELIGIOUS AUTHORITY; OURS IS WITH THAT OF OUR OWN PROCREATION.

FOR THOSE OF YOU WHO WOULD APPRECIATE A MORE REALISTIC VIEW OF WHAT FUTURE AWAITS OUR NEXT GENERATION OF AMERICANS PLEASE TAKE THE TIME TO VISIT THE WEBSITES LISTED BELOW. NO SINGLE VISION IS LIKELY TO BE CORRECT IN EVERY DETAIL, BUT THE DIFFERENCES CAN BE AS ENLIGHTENING AS THEIR SIMILARITIES, AND BOTH ARE USEFUL IN CREATING AWARENESS OF THE ISSUE.

COMMUNITY LIFE IN AMERICA OFFERS NUMEROUS OPPORTUNITIES TO EXPAND AWARENESS THROUGH LOCAL MEDIA, POLITICAL, EDUCATIONAL, RELIGIOUS, COMMERCIAL AND SOCIAL GROUPS WHO ARE ALWAYS SEEKING INTERESTING SPEAKERS. SHOULD YOU WISH TO HAVE ONE OR MORE OF THE PEOPLE ON THIS LIST SPEAK TO YOUR ORGANIZATION, PLEASE CONTACT THE AUTHOR. THEIR MESSAGES WILL BE CLEAR, URGENT, MEMORABLE AND CAPABLE OF PROVIDING NEW PERSPECTIVE.



ECD 6/25/11

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## END NOTES

- <sup>1</sup> ARP BULLETIN, APRIL 2011
- <sup>2</sup> WORLD FIGURES — UN. USA — FROSTY WOOLDRIDGE LETTER TO DIANE SAWYER, ABC, PER 5/23/11 EMAIL.
- <sup>3</sup> CAPE COD TIMES, 1/19/11. THE FUTURE OF FOOD RIOTS BY GWYNNE DYER.
- <sup>4</sup> IBID
- <sup>5</sup> WORLD POPULATION TO REACH 10 BILLION: BUT DON'T TALK ABOUT IT BY FROSTY WOOLDRIDGE. BOULDER (CO) DAILY CAMERA W/O 5/9/11
- <sup>6</sup> OPTIMUM POPULATION TRUST — WORLD POPULATION: FUTURE UNCERTAIN, 10/09
- <sup>7</sup> POPULATION INSTITUTE, POPLINE, SEPT/OCT 2007
- <sup>8</sup> GLOBAL POPULATION EDUCATION INC. GAINING PEOPLE LOSING GROUND BY WERNER FORNOS
- <sup>9</sup> PEANUTS COMIC STRIP
- <sup>10</sup> WORLD ON THE EDGE: HOW TO PREVENT ENVIRONMENTAL AND ECONOMIC COLLAPSE BY LESTER R. BROWN, 2011; W.W. NORTON & CO, 500 5TH AVENUE, NYC, NY 10110
- <sup>11</sup> THE NEXT 100 MILLION AMERICANS BY FROSTY WOOLDRIDGE, 2010, AUTHOR HOUSE, BLOOMINGTON, IN 2010

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