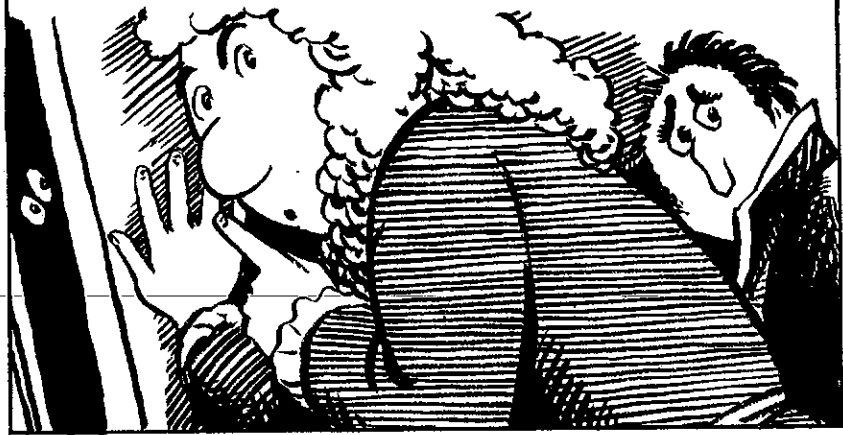


LET'S BE REASONABLE!

ENGLAND HAD—AND HAS—TWO FINE OLD UNIVERSITIES, OXFORD AND CAMBRIDGE... DURING THE UPS AND DOWNS OF THE 1600s, SCHOLARS WERE HIRED AND FIRED FOR THEIR RELIGIOUS BELIEFS.

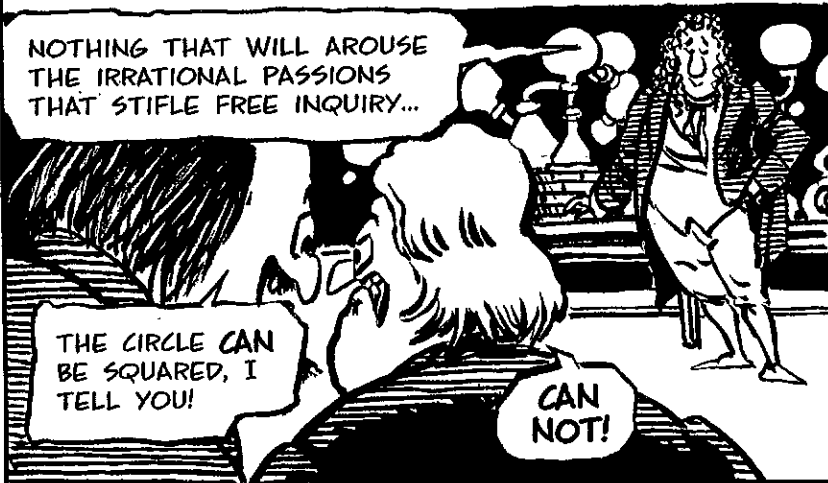


AROUND 1645, A FEW DISGUSTED SCIENTISTS FOUNDED A CLUB THEY CALLED THE INVISIBLE COLLEGE.



ITS WEEKLY MEETINGS OBSERVED ONE IRONCLAD RULE: NO TALKING ABOUT RELIGION OR POLITICS.

NOTHING THAT WILL AROUSE THE IRRATIONAL PASSIONS THAT STIFLE FREE INQUIRY...

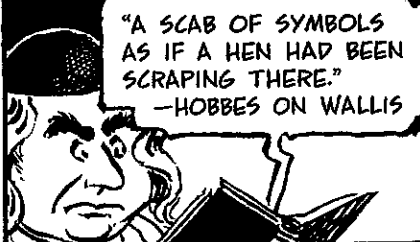


WHEN CHARLES II RETURNED, THE CLUB SOUGHT HIS SUPPORT, GOT IT, CHANGED ITS NAME TO THE ROYAL SOCIETY, AND BECAME A LEADING FORCE IN EUROPEAN SCIENCE FOR THREE CENTURIES.

FREE AND PATIENT INQUIRY IS A BOON TO ANY KINGDOM...



SOME ROYAL SOCIETY LUMINARIES: INSOMNIAC MATH WHIZ JOHN WALLIS PASSED ONE SLEEPLESS NIGHT CALCULATING THE SQUARE ROOT OF A 56-DIGIT NUMBER IN HIS HEAD. WALLIS WASTED MUCH ENERGY TRADING INSULTS WITH HOBBS ABOUT MATH.



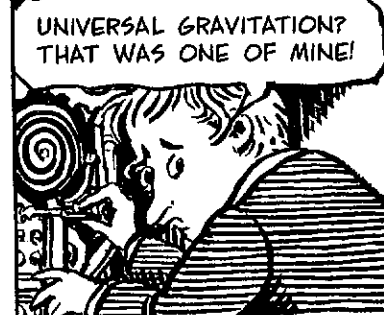
"A SCAB OF SYMBOLS AS IF A HEN HAD BEEN SCRAPING THERE."
—HOBBS ON WALLIS

ARISTOCRAT ROBERT BOYLE EXPERIMENTED WITH AIR PUMPS AND DISCOVERED THE ELASTIC PROPERTIES OF GASES. BOYLE BELIEVED THAT MATTER IS MADE OF LITTLE PARTICLES WITH NOTHING IN BETWEEN, AN OPINION THAT SCANDALIZED SOME SCIENTISTS.



NATURE ABHORS A VACUUM, AND SO DO WE!

CRANKY, HEADACHY ROBERT HOOKE HAD CHARGE OF THE SOCIETY'S EXPERIMENTAL APPARATUS. HOOKE SPEWED OUT FRESH IDEAS BUT RARELY DEVELOPED THEM—AND WHEN OTHERS DID SO, HE WHINED ENDLESSLY.



UNIVERSAL GRAVITATION? THAT WAS ONE OF MINE!

IN 1666, PLAGUE STRUCK ENGLAND... PEOPLE WITH COUNTRY HOUSES TOOK REFUGE THERE... LIKE 23-YEAR-OLD CAMBRIDGE MATHEMATICIAN **ISAAC NEWTON**, WHO STAYED AT HOME THROUGH 1667.



IN THOSE TWO SOLITARY YEARS, NEWTON REVOLUTIONIZED SCIENCE AND MATH.



HE CONCEIVED THE BASIC MATHEMATICAL LAWS OF PHYSICS... ANALYZED LIGHT WITH SUBTLE EXPERIMENTS... INVENTED **CALCULUS** AND DISCOVERED ITS FUNDAMENTAL THEOREM... AND THEN PUT MOST OF HIS RESULTS AWAY IN A **DESK DRAWER** FOR SEVERAL YEARS...

IT ALL CAME OUT SOON ENOUGH. IN HIS MASTERPIECE, **THE MATHEMATICAL PRINCIPLES OF NATURAL PHILOSOPHY**, NEWTON EXPLAINED EVERYTHING SEEN BY GALILEO AND KEPLER. THE ROYAL SOCIETY HAILED HIM AS A GENIUS!

THE UNIVERSE RUNS ON NEWTON'S EQUATIONS!



(AND A CRANKY GENIUS HE WAS. AS HEAD OF THE ROYAL SOCIETY, NEWTON FEUDED WITH SCIENTISTS AT HOME AND ABROAD.)

HOOKE IS BLIND TO MY GENIUS... LEIBNIZ IS A THIEF... LOCKE IS TOO FRIENDLY WITH HOOKE... ETC.

CAN'T WE BAN THIS, TOO?



THIS MATHEMATICAL VIEW OF THE UNIVERSE WAS MIRRORED IN POLITICS... IN THE RATIONAL PURSUIT OF MEASURABLE GAIN, ENGLAND FOUGHT PROTESTANTS AND SIDED WITH CATHOLICS... RELIGION SEEMED TO COUNT FOR LESS.

IF YOU CAN'T COUNT IT, WHY BOTHER?



IN OTHER WORDS, KING CHARLES II LIKED FRANCE AND MADE WAR ON THE NETHERLANDS.

FRANCE SHELTERED ME IN MY YOUTH... AM I BEING TOO SENTIMENTAL?

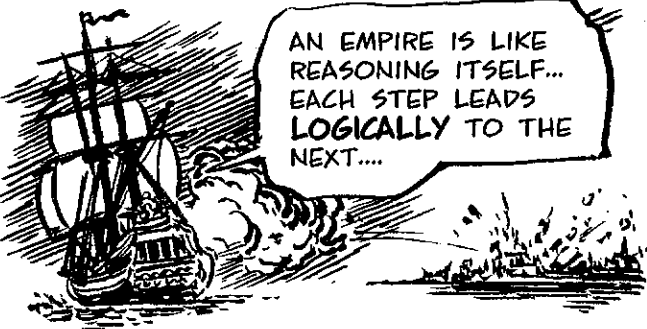
THE HEART HAS REASONS OF ITS OWN...



THIS WAS RATIONAL! THE NETHERLANDS, AFTER ALL, HAD THE SEAGOING EMPIRE ENGLAND CRAVED... IN FACT, THE TWO COUNTRIES HAD ALREADY FOUGHT A WAR OR TWO... NOW, IN THE NEXT ONE, ENGLAND GRABBED MANHATTAN IN 1664 AND RENAMED IT NEW YORK.



ENGLAND WENT ON TO PUSH ITS WAY FARTHER INTO AMERICA, AFRICA, AND INDIA.



AN EMPIRE IS LIKE REASONING ITSELF... EACH STEP LEADS LOGICALLY TO THE NEXT....

THE AMERICAN PLANTATIONS (TOBACCO, RICE, COTTON, SUGAR) SWALLOWED SHIPOADS OF AFRICAN SLAVES, AND LOCALLY CAPTURED SLAVES TOO, TAKEN IN "INDIAN" WARS.

WHAT ABOUT YOUR ENGLISH IDEALS LIKE LIBERTY?

WE TAKE LIBERTIES...



DR. LOCKE'S MEDICINE

LOCKE WAS A RARITY: A PHYSICIAN WHO WROTE CLEARLY. HIS PRESCRIPTION FOR ENGLAND HAS BEEN SWALLOWED BY MANY GOVERNMENTS SINCE...



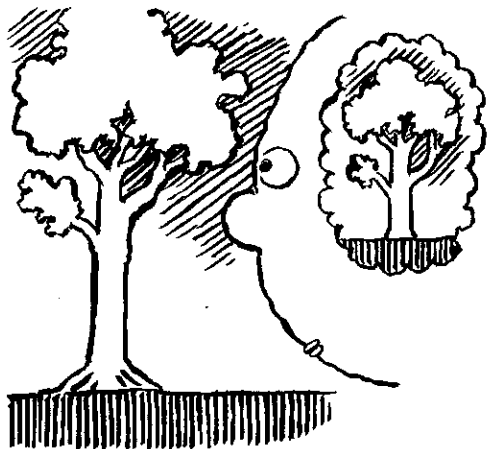
BORN IN 1632, LOCKE CAME OF AGE AT A TIME WHEN PEOPLE WHO KNEW THEY WERE RIGHT WERE KILLING OTHER PEOPLE WHO KNEW THEY WERE RIGHT.

DADDY, EXPLAIN AGAIN WHY PEOPLE WHO DON'T BELIEVE IN PREDESTINATION ARE THE SCUM OF THE EARTH!

CHRIST IMPLIED IT!



HOW, ASKS LOCKE, DO WE KNOW ANYTHING? HIS ANSWER: THROUGH OUR SENSES, WHICH WRITE IMPRESSIONS ON OUR MINDS. AT BIRTH WE KNOW NOTHING... OUR MINDS ARE BLANK, READY FOR INPUT FROM EYES, EARS AND ALL.



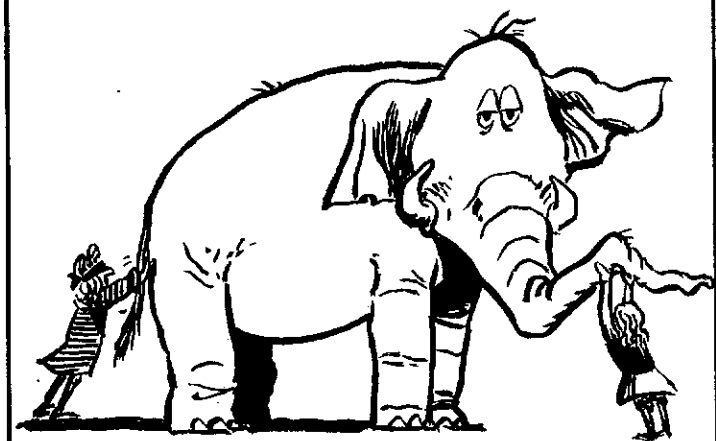
AS KNOWLEDGE ACCUMULATES, THE MIND SORTS IT INTO CATEGORIES, CONCEPTS, ABSTRACTIONS.

"CHAPTER 16, ON THE IDENTITY OF VEGETABLES..."

YAWN...



THAT IS, EVERYTHING WE EXPERIENCE DIRECTLY IS FINITE. WE SEE, HEAR, AND TOUCH THINGS OF ONLY LIMITED EXTENT.

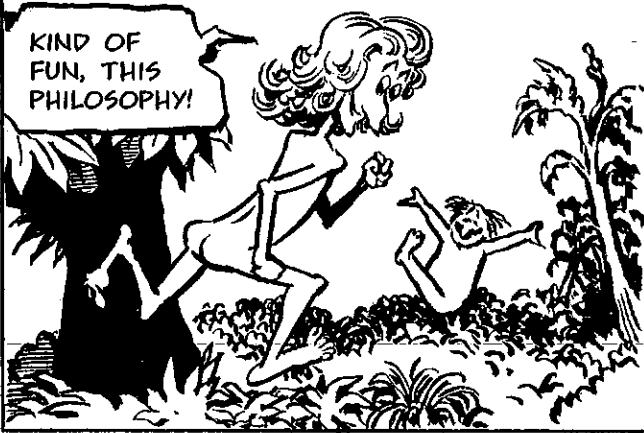


THEREFORE, "KNOWLEDGE" OF THE INFINITE IS A CONCLUSION REACHED BY THE MIND, TENTATIVE AND PROVISIONAL. SINCE GOD IS INFINITE, RELIGIOUS DIFFERENCES ARE TOO UNCERTAIN TO BE FOUGHT OVER AND SHOULD BE TOLERATED!

EXCEPT CATHOLIC DIFFERENCES, OF COURSE!



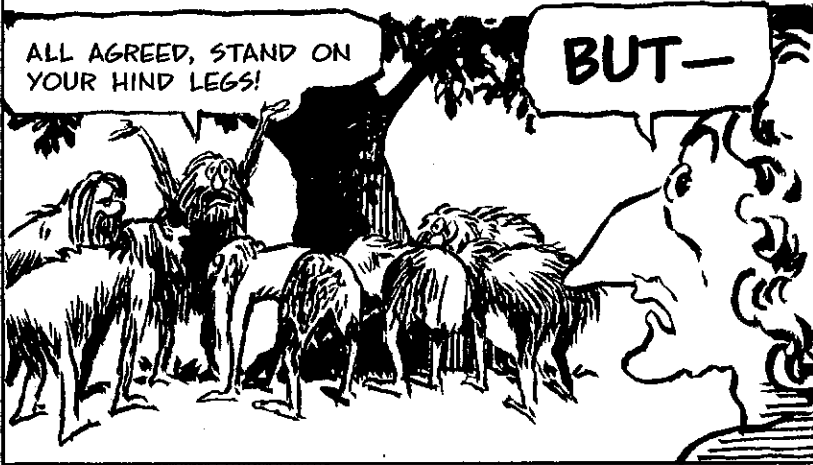
BESIDES TOLERATING RELIGIOUS DIFFERENCES, WHAT ELSE SHOULD GOVERNMENT DO? TO ANSWER THIS, LOCKE FOLLOWS HOBBS BACK TO THE GOOD OLD STATE OF NATURE.



LOCKE'S STATE OF NATURE IS GENTLER THAN HOBBS'S. "NATURAL" MEN DON'T ALWAYS MURDER, SAYS LOCKE... SOMETIMES THEY JUST ROB, INSULT, OR NAG!



LOCKE AGREES WITH HOBBS THAT "NATURAL" MEN FIND SECURITY BY GIVING UP THEIR POWER AND LIBERTY TO A GOVERNMENT.



IDEALLY, THEY SURRENDER ONLY A LITTLE, NO MORE THAN NECESSARY TO KEEP ORDER. LOCKE CALLS FOR NO HOBBSIAN LEVIATHAN, BUT A MINIMAL GOVERNMENT JUST STRONG ENOUGH TO DO THE JOB. IN OTHER WORDS, INDIVIDUALS RETAIN CERTAIN NATURAL RIGHTS, WHICH GOVERNMENT OUGHT TO PROTECT.



SOME ROYALISTS REBUTTED LOCKE'S LIBERAL IDEAS WITH THIS ARGUMENT: SOCIETY, THEY SAID, IS LIKE A FAMILY... AND JUST AS THE FATHER IS ALL-POWERFUL IN THE FAMILY, THE KING SHOULD BE ALL-POWERFUL IN SOCIETY.



LOCKE'S RESPONSE: WHO SAYS FATHERS ARE ALL-POWERFUL? WHAT ABOUT MOTHERS? AND DON'T PARENTS HAVE A SOCIAL OBLIGATION TO RAISE CHILDREN TO BE RESPONSIBLE ADULTS, NOT JUST OBEDIENT PAWNS?

"THE POWER... THAT PARENTS HAVE OVER THEIR CHILDREN ARISES FROM [THE] DUTY TO TAKE CARE OF THEIR OFFSPRING."

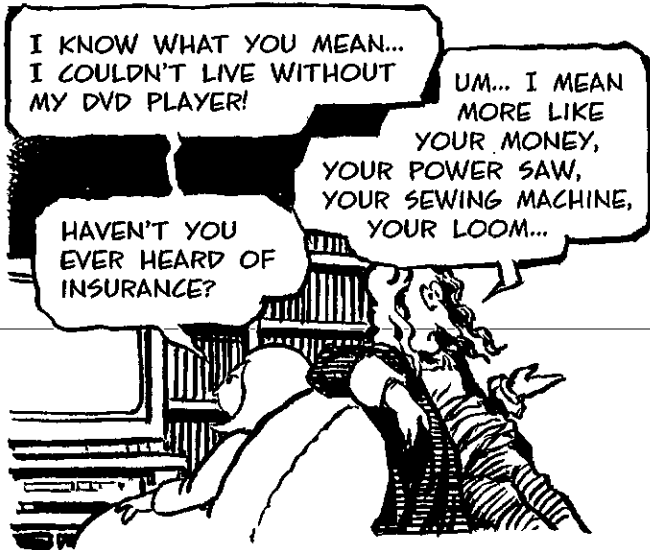


IT'S STUFF LIKE THIS THAT MAKES LOCKE SO LIKABLE, DESPITE HIS SHORTCOMINGS.

KIDS? ENOUGH... I MEAN IT... O.K., SOMEONE NEEDS A TIME-OUT... STOP... PLEASE?



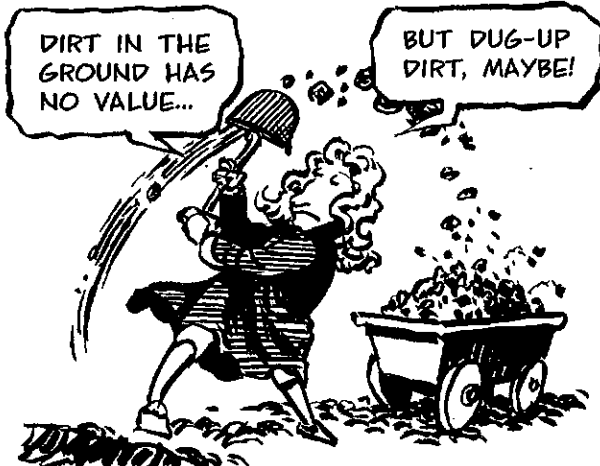
FOR DR. LOCKE, THE TOP THREE RIGHTS ARE **LIFE, LIBERTY, AND PROPERTY**. A THIEF WHO TAKES MY MEANS OF MAKING A LIVING MIGHT AS WELL KILL ME!



LOCKE SAYS WE GET PROPERTY BY WORKING FOR IT: WE SOW AND REAP, SO WE OWN OUR CROPS; WE DIG MINES, SO WE OWN THE ORE; BUILD A MACHINE, AND IT'S OURS.



ALL ECONOMIC VALUE COMES FROM LABOR, AND MONEY IS OUR SHARED MEASURE OF ECONOMIC VALUE.



THEREFORE:

GOVERNMENT MUST PROTECT AND RESPECT **PRIVATE PROPERTY**... THIEVES SHOULD BE TREATED LIKE MURDERERS... THE GOVERNMENT THAT TAKES MY PROPERTY AGAINST MY WILL IS A THIEF!



GOVERNMENT CAN TAX ONLY WITH THE COLLECTIVE CONSENT OF PROPERTY OWNERS, I.E., BY A VOTE OF PARLIAMENT. IN OTHER WORDS, **NO TAXATION WITHOUT REPRESENTATION**.



THIS MAY RING A BELL, BECAUSE TO SOME EXTENT LOCKE'S IDEAS STILL RULE OUR LIVES... AND THESE IDEAS ARE SO FAMILIAR, SO **REASONABLE-SOUNDING**, THAT IT'S ALMOST EMBARRASSING TO CRITICIZE THEM.

