

How "great" are the Great Books?

In the 1960s a set of books called the Great Books of the Western World was published. It was supposed to represent the best of Western literature and enable the reader to further their liberal arts education. Sixty volumes in all, it included works by Plato, Aristotle, Shakespeare, Milton, Galileo, Kepler, Melville, Darwin, etc. (See Appendix A.) These great books were selected based on the way they discussed a set of 102 "great ideas" such as art, astronomy, beauty, evil, evolution, mind, nature, poetry, revolution, science, will, wisdom, etc. (See Appendix B.) How "great" are these books, and how "great" are the ideas expressed in them?

Given full text versions of these books it would be almost trivial to use the "great ideas" as input and apply relevancy ranking algorithms against the texts thus creating a sort of score -- a "Great Ideas Coefficient". Term Frequency/Inverse Document Frequency is a well-established algorithm for computing just this sort of thing:

$$\text{relevancy} = (c / t) * \log(d / f)$$

where:

c = number of times a given word appears in a document

t = total number of words in a document

d = total number of documents in a corpus

f = total number of documents containing a given word

Thus, to calculate our Great Ideas Coefficient we would sum the relevancy score for each "great idea" for each "great book". Plato's Republic might have a cumulative score of 525 while Aristotle's On The History Of Animals might have a cumulative score of 251. Books with a larger Coefficient could be considered greater. Given such a score a person could measure a book's "greatness". We could then compare the score to the scores of other books. Which book is the "greatest"? We could compare the score to other measurable things such as book's length or date to see if there were correlations. Are "great books" longer or shorter than others? Do longer books contain more "great ideas"? Are there other books that were not included in the set that maybe should have been included? Instead of summing each relevancy score, maybe the "great ideas" can be grouped into gross categories such as humanities or sciences, and we can sum those scores instead. Thus we may be able to say one set of book is "great" when it comes the expressing the human condition and these others are better at describing the natural world. We could ask ourselves, which number of books represents the best mixture of art and science because their humanities score is almost equal to its sciences score. Expanding the scope beyond general education we could create an alternative set of "great ideas", say for biology or mathematics or literature, and apply the same techniques to other content such as full text scholarly journal literatures.

The initial goal of this study is to examine the "greatness" of the Great Books, but the ultimate goal is to learn whether or not this quantitative process can be applied other bodies of literature and ultimately assist the student/scholar in their studies/research.

Appendix A - Authors and titles in the Great Books series

Homer

- The Iliad
- The Odyssey

Aeschylus

- Prometheus Bound
- Seven Against Thebes
- The Oresteia
- The Persians
- The Suppliant Maidens

Sophocles

- Ajax
- Electra
- Philoctetes
- The Oedipus Cycle
- The Trachiniae

Euripides

- Alcestis
- Andromache
- Bacchantes
- Cyclops
- Electra
- Hecuba
- Helen
- Heracleidae
- Heracles Mad
- Hippolytus
- Ion
- Iphigeneia at Aulis
- Iphigeneia in Tauris
- Medea
- Orestes
- Phoenician Women
- Rhesus
- The Suppliants
- Trojan Women

Aristophanes

- Ecclesiazousae
- Lysistrata
- Peace
- Plutus
- The Acharnians

- The Birds
- The Clouds
- The Frogs
- The Knights
- The Wasps
- Thesmophoriazusae

Herodotus

- The History

Thucydides

- The History of the Peloponnesian War

Plato

- Apology
- Charmides
- Cratylus
- Critias
- Crito
- Euthydemus
- Euthyphro
- Gorgias
- Ion
- Laches
- Laws
- Lysis
- Meno
- Parmenides
- Phaedo
- Phaedrus
- Philebus
- Protagoras
- Sophist
- Statesman
- Symposium
- The Republic
- The Seventh Letter
- Theaetetus
- Timaeus

Aristotle

- Categories
- History of Animals
- Metaphysics
- Meteorology

- Minor biological works
- Nicomachean Ethics
- On Generation and Corruption
- On Interpretation
- On Sophistical Refutations
- On the Gait of Animals
- On the Generation of Animals
- On the Motion of Animals
- On the Parts of Animals
- On the Soul
- Physics
- Poetics
- Politics
- Posterior Analytics
- Prior Analytics
- Rhetoric
- The Athenian Constitution
- Topics

Hippocrates

- Works

Galen

- On the Natural Faculties

Euclid

- The Thirteen Books of Euclid's Elements

Archimedes

- Book of Lemmas
- Measurement of a Circle
- On Conoids and Spheroids
- On Floating Bodies
- On Spirals
- On the Equilibrium of Planes
- On the Sphere and Cylinder
- The Method Treating of Mechanical Problems
- The Quadrature of the Parabola
- The Sand-Reckoner

Apollonius of Perga

- On Conic Sections

Nicomachus of Gerasa

- Introduction to Arithmetic

Lucretius

- On the Nature of Things

Epictetus

- The Discourses

Marcus Aurelius

- The Meditations

Virgil

- The Aeneid
- The Eclogues
- The Georgics
-

Plutarch

- The Lives of the Noble Grecians and Romans

P. Cornelius Tacitus

- The Annals
- The Histories

Ptolemy

- The Almagest

Nicolaus Copernicus

- On the Revolutions of Heavenly Spheres

Johannes Kepler

- Epitome of Copernican Astronomy
- The Harmonies of the World

Plotinus

- The Six Enneads

Augustine of Hippo

- On Christian Doctrine
- The City of God
- The Confessions

Thomas Aquinas

- Summa Theologica

Dante Alighieri

- The Divine Comedy

Geoffrey Chaucer

- Troilus and Criseyde
- The Canterbury Tales

Niccolò Machiavelli

- The Prince

Thomas Hobbes

- Leviathan

François Rabelais

- Gargantua and Pantagruel

Michel Eyquem de Montaigne

- Essays

William Shakespeare

- A Midsummer-Night's Dream
- All's Well That Ends Well
- Antony and Cleopatra
- As You Like It
- Coriolanus
- Cymbeline
- Julius Caesar
- King Lear
- Love's Labour's Lost
- Macbeth
- Measure For Measure
- Much Ado About Nothing
- Othello, the Moor of Venice
- Pericles, Prince of Tyre
- Romeo and Juliet
- Sonnets
- The Comedy of Errors
- The Famous History of the Life of King Henry the Eighth
- The First Part of King Henry the Fourth
- The First Part of King Henry the Sixth
- The Life and Death of King John
- The Life of King Henry the Fifth
- The Merchant of Venice
- The Merry Wives of Windsor
- The Second Part of King Henry the Fourth
- The Second Part of King Henry the Sixth
- The Taming of the Shrew
- The Tempest
- The Third Part of King Henry the Sixth
- The Tragedy of Hamlet, Prince of Denmark
- The Tragedy of King Richard the Second
- The Tragedy of Richard the Third
- The Two Gentlemen of Verona
- The Winter's Tale
- Timon of Athens
- Titus Andronicus
- Troilus and Cressida

- Twelfth Night; or, What You Will

William Gilbert

- On the Loadstone and Magnetic Bodies

Galileo Galilei

- Dialogues Concerning the Two New Sciences

William Harvey

- On the Circulation of Blood
- On the Generation of Animals
- On the Motion of the Heart and Blood in Animals

Miguel de Cervantes

- The History of Don Quixote de la Mancha

Sir Francis Bacon

- Advancement of Learning
- New Atlantis
- Novum Organum

René Descartes

- Discourse on the Method
- Meditations on First Philosophy
- Objections Against the Meditations and Replies
- Rules for the Direction of the Mind
- The Geometry

Benedict de Spinoza

- Ethics

John Milton

- Areopagitica
- English Minor Poems
- Paradise Lost
- Samson Agonistes

Blaise Pascal

- Pensées
- Scientific and mathematical essays
- The Provincial Letters

Sir Isaac Newton

- Mathematical Principles of Natural Philosophy
- Optics

Christian Huygens

- Treatise on Light

John Locke

- A Letter Concerning Toleration
- An Essay Concerning Human Understanding
- Concerning Civil Government, Second Essay

George Berkeley

- The Principles of Human Knowledge

David Hume

- An Enquiry Concerning Human Understanding

Jonathan Swift

- Gulliver's Travels

Laurence Sterne

- The Life and Opinions of Tristram Shandy, Gentleman

Henry Fielding

- The History of Tom Jones, a Foundling

Charles de Secondat, Baron de Montesquieu

- The Spirit of the Laws

Jean Jacques Rousseau

- A Discourse on Political Economy
- A Discourse on the Origin of Inequality
- The Social Contract

Adam Smith

- An Inquiry into the Nature and Causes of the Wealth of Nations

Edward Gibbon

- The Decline and Fall of the Roman Empire

Immanuel Kant

- Excerpts from The Metaphysics of Morals
- Fundamental Principles of the Metaphysic of Morals
- General Introduction to the Metaphysic of Morals
- Preface and Introduction to the Metaphysical Elements of Ethics with a note on Conscience
- The Critique of Judgement

- The Critique of Practical Reason
- The Critique of Pure Reason
- The Science of Right

American State Papers

- Articles of Confederation
- Declaration of Independence
- The Constitution of the United States of America

Alexander Hamilton, James Madison, John Jay

- The Federalist

John Stuart Mill

- Considerations on Representative Government
- On Liberty
- Utilitarianism

James Boswell

- The Life of Samuel Johnson, LL.D.

Antoine Laurent Lavoisier

- Elements of Chemistry

Jean Baptiste Joseph Fourier

- Analytical Theory of Heat

Michael Faraday

- Experimental Researches in Electricity

Georg Wilhelm Friedrich Hegel

- The Philosophy of History
- The Philosophy of Right

Johann Wolfgang von Goethe

- Faust

Herman Melville

- Moby Dick; or, The Whale

Charles Darwin

- The Descent of Man and Selection in Relation to Sex
- The Origin of Species by Means of Natural Selection

Karl Marx

- Capital

Karl Marx and Friedrich Engels

- Manifesto of the Communist Party

Count Leo Tolstoy

- War and Peace

Fyodor Mikhailovich Dostoevsky

- The Brothers Karamazov

William James

- The Principles of Psychology

Sigmund Freud

- A General Introduction to Psycho-Analysis
- Beyond the Pleasure Principle
- Civilization and Its Discontents
- Group Psychology and the Analysis of the Ego
- Inhibitions, Symptoms, and Anxiety
- Instincts and Their Vicissitudes
- New Introductory Lectures on Psycho-Analysis
- Observations on "Wild" Psycho-Analysis
- On Narcissism
- Repression
- Selected Papers on Hysteria
- The Ego and the Id
- The Future Prospects of Psycho-Analytic Therapy
- The Interpretation of Dreams
- The Origin and Development of Psycho-Analysis
- The Sexual Enlightenment of Children
- The Unconscious
- Thoughts for the Times on War and Death

Appendix B - The "great" ideas

angel	honor	poetry
animal	hypothesis	principle
aristocracy	idea	progress
art	immortality	prophecy
astronomy	induction	prudence
beauty	infinity	punishment
being	judgment	quality
cause	justice	quantity
chance	knowledge	reasoning
change	labor	relation
citizen	language	religion
constitution	law	revolution
courage	liberty	rhetoric
custom & convention	life & death	same & other
definition	logic	science
democracy	and love	sense
desire	man	sign & symbol
dialectic	mathematics	sin
duty	matter	slavery
education	mechanics	soul
element	medicine	space
emotion	memory & imagination	state
eternity	metaphysics	temperance
evolution	mind	theology
experience	monarchy	time
family	nature	truth
fate	necessity & contingency	tyranny
form	oligarchy	universal & particular
god	one & many	virtue & vice
good & evil	opinion	war & peace
government	opposition	wealth
habit	philosophy	will
happiness	physics	wisdom
history	pleasure & pain	world