

CONCEPTUAL SPIRAL

Dec 90 - Jan 91

John R. Byrd

CONCEPTUAL SPIRAL

Dec 90 - Jan 91

John R. Byrd

FOCUS

To make evident how science, engineering, and technology influence our ability to interact and cope with an unfolding reality that we are a part of, live in, and feed upon.

FOR OPENERS

let's reexamine our abstract

? - What do we find - ?

KEY PASSAGE

...the theme that weaves its way through this “Discourse on Winning and Losing” is not so much contained within each of the six sections, per se, that make up the “Discourse”; rather, it is the kind of thinking that both lies behind and makes up its very essence. For the interested, a careful examination will reveal that the increasingly abstract discussion surfaces a process of reaching across many perspectives; pulling each and every one apart (analyses), all the while intuitively looking for those parts of the disassembled perspectives which naturally interconnect with one another to form a higher order, more general elaboration (synthesis) of what is taking place. As a result, the process not only creates the “Discourse” but it also represents the key to evolve the tactics, strategies, goals, unifying themes, etc., that permit us to actively shape and adapt to the unfolding world we are a part of, live in, and feed upon.

? - WHY IS THIS PASSAGE KEY - ?

- Because it suggests a general way by which we can deal with the world around us.

More specifically we
shall show that:

- By exploiting the theme contained within this passage and by examining the practice of science/engineering and the pursuit of technology we can evolve a conceptual spiral for comprehending, shaping, and adapting to that world.

NOW

If the practice of science/engineering and the pursuit of technology
are going to be a key for unveiling this "conceptual spiral",

we should ask ourselves:

In speaking of science, engineering, and technology
what do we mean?

SIMPLE-MINDED MESSAGE

- Science can be viewed as a self-correcting process of observation, hypothesis, and test.
whereas
- Engineering can be viewed as a self-correcting process of observation, design and test.
while
- Technology can be viewed as the wherewithal or state of the art produced by the practice of science and engineering.

? – RAISES QUESTION – ?

What has the practice of science, engineering and the pursuit
of technology given us or done for us?

EXAMPLES FROM SCIENCE

Some Outstanding Contributors

- Isaac Newton (1687)
- Adam Smith (1776)
- A.M. Ampere/C.F. Gauss (1820's/1830's)
- Carnot/Kelvin/Clausius/Boltzman (1824/1852/1865/1870's)
- Faraday/Maxwell/Hertz (1831/1865/1888)
- Darwin & Wallace (1838/1858)
- Marx & Engels (1848 – 1895)
- Gregory Mendel (1866)
- Henri Poincare (1890's)

Contributions

- “Exactness”/predictability via laws of motion/gravitation
- Foundation for modern capitalism
- Exactness/predictability via electric/magnetic laws
- Decay/disintegration via second law of thermodynamics
- Union of electricity & magnetism via field theory
- Evolution via theory of natural selection
- Basis for modern “scientific socialism”
- Inherited traits via his laws of genetics
- Inexactness/unpredictability via gravitational influence of three bodies

EXAMPLES FROM SCIENCE

Some Outstanding Contributors

- Max Planck (1900)
- Albert Einstein (1905/1916)
- Bohr/de Broglie/Heisenberg/Schrodinger/Dirac/et al (1913/1920's...)
- L. Lowenheim & T. Skolem (1915 – 1933)
- Godel/Tarski/Church/Turing/et al (1930's ...)
- Claude Shannon (1948)
- Crick & Watson (1953)
- Lorenz/Prigogine/Mandelbrot/Feigenbaum/et al (1963/1970's...)
- G. Chaitin/C. Bennett (1965/1985)

Contributions

- Discreteness/discontinuity via his quantum theory
- Exactness/predictability via his special & general relativity theories
- Uncertainty/indeterminism in quantum physics
- Unconfinement (non-categoricalness) in mathematics & logic
- Incompleteness/undecidability in mathematics & logic
- Information theory as basis for communication
- DNA spiral helix as the genetically coded information for life
- Irregularity/unpredictability in nonlinear dynamics
- Incompleteness/incomprehensibility in information theory

EXAMPLES FROM ENGINEERING

Some Outstanding Contributors

- Savery/Newcomen/Watt (1698/1705/1769)
- George Stephenson (1825)
- H. Pixii/M.H. von Jacobi (1832/1838)
- Samuel Morse (1837)
- J.N. Niepce/J.M. Daguerre/Fox Talbot (1839)
- Gaston Plante (1859)
- Z Gramme/H. Fontaine (1869/1873)
- Nicholas Otto (1876)
- Alexander G. Bell (1876)
- Thomas A. Edison (1877)
- Thomas A. Edison (1879)
- Werner von Siemens (1879)
- Germany (1881)
- Charles Parsons (1884)
- Benz/Daimler (1885/1886)
- T.A. Edison/J. LeRoy/T. Armat/et al (1890–1896)
- N. Tesla/G. Marconi (1893/1895)
- Rudolf Diesel (1897)
- Italy (1902)

Contributions

- Steam engine
- Steam railway
- AC generator/AC motor
- Telegraph
- Photography
- Rechargeable battery
- DC generator/DC motor
- 4-cycle gasoline engine
- Telephone
- Phonograph
- Electric light bulb
- Electric locomotive
- Electric metropolitan railway
- Steam turbine
- Gasoline automobile
- Motion-picture camera/projector
- Wireless telegraph
- Diesel locomotive
- Electric railway

EXAMPLES FROM ENGINEERING

Some Outstanding Contributors

- Wright Brothers (1903)
- Christian Hulmeyer (1904)
- V. Paulsen/R.A. Fessenden (1904/1906)
- John A. Fleming/Lee De Forest (1904/1907)
- Tri Ergon/Lee De Forest (1919/1923)
- USA-Pittsburgh (1920)
- American Car Locomotive (1925)
- J.L. Baird (1926)
- Warner Brothers (1927)
- Germany/USA (1932/1934)
- Britain/USA/Germany (1935-1939)
- Germany/Britain/USA (1935/1936/1939)
- Hans von Ohain/Germany (1939/1939)
- Eckert & Mauchly (1946)
- Bardeen & Brattain & Shockley (1947)
- Ampex (1955)
- J. Kilby/R. Noyce (1958/1959)
- T.H. Maiman (1960)
- Philips (1970)
- Sony (1980)

Contributions

- Gasoline powered airplane
- Radar
- Wireless telephone
- Vacuum tube
- Sound motion picture
- Public radio broadcasting
- Diesel-electric locomotive
- Television
- Jazz singer/sound motion picture
- Diesel-electric railway
- Operational radar
- Television broadcasting
- Jet engine/jet airplane
- Electronic computer
- Transistor
- Video recorder
- Integrated electric circuit
- Laser
- Video cassette recorder
- Video camcorder

? – RAISES QUESTION – ?

Looking at the past via the contributions these people have provided the world:
What can we say about our efforts for now and for the future?

GRAND MESSAGE

In a mathematical/logical sense we can say:

- Taken together the theorems associated with Godel, Lowenheim & Skolem, Tarski, Church, Turing, Chaitin, and others reveal that: Not only do the statements representing a theoretical system for explaining some aspect of reality explain that reality inadequately or incompletely but, like it or not, these statements spill out beyond any one system and do so in unpredictable ways.

or conversely

- These theorems reveal that: We can neither predict the future migration and evolution of these statements nor just confine them to any one system nor suggest that they fully embrace any such system.

Now if we extend these ideas and build upon them in a scientific/engineering sense we can say:

- Any coherent intellectual or physical systems we evolve to represent or deal with large portions of reality will at best represent or deal with that reality incompletely or imperfectly.
- Moreover, we neither have nor can we create beforehand a supersystem that can forecast or predict the kind of systems we will evolve in the future to represent or deal with that reality more completely or more perfectly.
- Furthermore, such a supersystem can neither forecast nor predict the consequences that flow from those systems that we create later on.
- Going even further, we cannot determine or discern the character or nature of such systems (super or otherwise) within themselves.

Which altogether imply that:

- People using theories or systems evolved from a variety of information will find it increasingly difficult and ultimately impossible to interact with and comprehend phenomena or systems that move increasingly beyond and away from that variety—that is, they will become more and more isolated from that which they are trying to observe or deal with, unless they exploit the new variety to modify their theories/systems or create new theories/systems.

? - RAISES QUESTION - ?

Taken together, what do the many contributions and Grand Message suggest?

IMPRESSION

While we can comprehend and predict some portions of the everchanging world that unfolds before us, other portions seem forever indistinct and unpredictable.

? – RAISES QUESTION – ?

Very nice, but what does all this have to do with our ability to thrive and grow in such a world that is seemingly orderly and predictable yet disorderly and unpredictable?

COMMENT

- To get at this question let's take a closer and more general look at what science, engineering, and the pursuit of technology produce and how this is accomplished.
- Furthermore, suspecting that these practices and pursuit are not wholly accidental nor obvious and that they seem to change us in some ways, let's also examine what keeps the whole enterprise going and how this enterprise affects us personally.

In other words in order to gain a richer image of science, engineering, and technology we will address the following questions:

- What do science, engineering and technology produce?
- How is this accomplished?
- What is the driving mechanism that keeps the process alive and ongoing; or put another way, what phenomena sustains or nourishes the whole enterprise?
- Finally, how does this enterprise of science, engineering, and technology affect us personally as individuals, as groups, or as societies?

FIRST OF ALL

? – What do science, engineering, and technology produce – ?

If we examine the contributions from the practice of science and engineering and generalize from these individual contributions what do we see? We see new ideas, new systems, new processes, new materials, new etc.

In other words

Science, engineering, and technology produce change via novelty.

? – How is this novelty produced – ?

- To examine novelty we speak of it in terms of those features that seem to be part of that novelty. In other words, we reduce a novel pattern down to some features that make up that pattern. Different people in examining such a pattern may see differing features that make it up. In other words, there are different ways by which a pattern can be reduced hence the possibility for differing features or parts. Regardless of how it comes out, we call this process of reduction: analysis.
- Pushing this process even further we can reduce many different patterns (analyses) to parts that make up each pattern and use these parts, or variations thereof, to make a new pattern. This is done by finding some common features that interconnect some or many of these parts so that a new pattern—whether it be a new concept, new system, new process, new etc.—can be created. We call this process of connection: synthesis.
- Now if we test the results of this process with the world we're dealing with, we have an analytical/synthetic feedback loop for comprehending, shaping, and adapting to that world.

Pulling all this together we can say that:

Novelty is produced by a mental/physical feedback process of analyses and synthesis that permits us to interact with the world so that we can comprehend, cope with, and shape that world as well as be shaped by it.

which carries us to the question

? –

What is the driving mechanism that keeps the process alive and ongoing; or put another way, what phenomena sustains or nourishes the whole enterprise.
--

 – ?

- One thing is clear: If our ideas and thoughts matched perfectly with what goes on in the world; and if the systems or processes we designed performed perfectly and matched with whatever we wanted them to do, what would be the basis for evolving or creating new ideas, new systems, new processes, new etc.? The answer: There wouldn't be any!

In other words

- The presence and production of mismatches are what sustain and nourish the enterprise of science, engineering, and technology, hence keep it alive and ongoing—otherwise there would be no basis for it to continue.

VERY NICE
BUT

? –

How does this enterprise of science, engineering, and technology affect us personally as individuals, as groups, or as societies
--

 – ?

- As already shown the practice of science/engineering and the pursuit of technology not only change the physical world we interact with—via new systems, new processes, new etc.—but they also change the mental/physical ways by which we think about and act upon that world.

In this sense

- The practice of science/engineering and the pursuit of technology permit us to continually rematch our mental/physical orientation with that changing world so that we can continue to thrive and grow in it.

Put simply

- The enterprise of science, engineering, and technology affects us personally as individuals, as groups, or as societies by changing our orientation to match with a changing world that we, in fact, help change.

NOW

- If we reverse direction and reexamine where we have been we can see that: Without the intuitive interplay of analyses and synthesis we have no basic process for generating novelty; no basic process for addressing mismatches between our mental images/impressions and the reality it is suppose to represent; and no basic process for reshaping our orientation toward that reality as it undergoes change.

Put simply

- Without the interplay of analyses and synthesis we have no basis for the practice of science/engineering and the pursuit of technology--since novelty, mismatches, and reorientation as the life blood ingredients that naturally arise out of such practice and pursuit can no longer do so.

VIEWED IN THIS LIGHT

The preceding statements seem to suggest that the “Simple-Minded Message” presented near the beginning whereby:

Science can be viewed as a self-correcting process of observation, hypothesis, and test

whereas

Engineering can be viewed as a self-correcting process of observation, design, and test

should be modified as follows:

Science can be viewed as a self-correcting process of observations, analyses/synthesis, hypothesis, and test

whereas

Engineering can be viewed as a self-correcting process of observations, analyses/synthesis, design, and test.

?-Why-?

Without the interplay of analyses and synthesis one can evolve neither the hypothesis or design and follow-on test nor the original “Simple-Minded Message” nor this presentation itself.

? - RAISES QUESTION - ?

What bearing does all this have
on
Winning and Losing

ILLUMINATION

Novelty is not only produced by the practice of science/engineering and the pursuit of technology, it is also produced by the forces of nature, by our own thinking and doing as well as by others. Furthermore, novelty is produced continuously, if somewhat erratically or haphazardly. Now, in order to thrive and grow in such a world we must match our thinking and doing, hence our orientation, with that emerging novelty. Yet, any orientation constrained by experiences before that novelty emerges (as well as by the Grand Message discussed earlier) introduce mismatches that confuse or disorient us. However, the analytical/synthetic process, previously described, permits us to address these mismatches so that we can rematch thereby reorient our thinking and action with that novelty. Over and over this continuing whirl of reorientation, mismatches, analyses/synthesis enables us to comprehend, cope with, and shape as well as be shaped by novelty that literally flows around and over us.

(29)

Maybe So

yet, upon reflection, we still have a puzzle: Why does our world continue to unfold in an irregular, disorderly, unpredictable manner even tho some of our best minds try to represent it as being more regular, orderly, & predictable?

(30)

(30)

More pointedly

With so much effort over such a long period by so many people to comprehend, shape, & adapt to a world that we depend upon for vitality and growth: Why does such a world, although richer and more robust, continue to remain uncertain, ever-changing, & unpredictable?

(31)

Response

Very simply, review of "Destruction & Creation", this presentation, and our own experiences reveal that the various theories, systems, processes, etc. that we employ to make sense of that world contain features that generate mismatches that, in turn, keep such a world uncertain, everchanging, & unpredictable.

include
These Features:

(32)

- Uncertainty associated with the unconfinement, undecidability, incompleteness theorems of mathematics & logic.
- Numerical imprecision associated with using the rational & irrational numbers in the calculation & measurement processes.
- Quantum uncertainty associated with ~~using~~ Planck's constant and Heisenberg's Uncertainty Principle.
- Entropy increase associated with the Second Law of Thermodynamics.
- Irregular or erratic behavior associated with far-from-equilibrium, open, nonlinear processes or systems with feedback.
- Mutations associated with environmental pressure, replication errors, or unknown influences in molecular & evolutionary biology.
- Incomprehensibility associated with inability to completely screen, filter, or otherwise consider spaghetti-like influences from a plethora of everchanging, erratic, or unknown outside events.
- Ambiguity associated with natural languages as they are used and interact with one another.
- Novelty generated by the thinking & actions of unique individuals and their many-sided interactions with each other.

Underlying Message

There is no way out, unless we can eliminate the features just cited. Since we ~~don't~~ know how to do this: we must continue the whirl of reorientation, mismatches, analyses/synthesis, over and over again ad infinitum, as a basis to comprehend, shape, & adapt to an unfolding, ~~developing~~ evolving reality that remains uncertain, everchanging, unpredictable.

29

30 Oct 91

Maybe So

Still we have ^a this question: Why does our world continue
to unfold in ^{an} irregular, disorderly, unpredictable manner —
even tho some of our "best" minds try to represent it as
being more regular, orderly, & ~~predictable~~ predictable?

NOW

If we connect this continuing whirl of reorientation, mismatches, analyses/synthesis and the novelty that arises out of it with the previous discussion we can see that we have:

A Conceptual Spiral for

•	Exploration	–	Discovery	–	Innovation
•	Thinking	–	Doing	–	Achieving
•	Learning	–	Unlearning	–	Relearning
•	Comprehending	–	Shaping	–	Adapting

hence a Conceptual Spiral for generating

•	Insight	–	Imagination	–	Initiative
---	---------	---	-------------	---	------------

WHICH
? - RAISES THE QUESTION - ?

Can we survive and grow without these abilities?

! NO !

WHICH SUGGESTS

The conceptual spiral also represents:

A
Paradigm
for
Survival and Growth

POINT

Since survival and growth are directly connected with the uncertain, everchanging, unpredictable world of winning and losing we will exploit this whirling (conceptual) spiral of orientation, mismatches, analyses/synthesis, reorientation, mismatches, analyses/synthesis...so that we can comprehend, cope with, and shape, as well as be shaped by that world and the novelty that arises out of it.

SOURCES

SOURCES BY AUTHOR

- Adcock, F.E. "The Greek and Macedonian Art of War", 1957
- Alger, John I. "The Quest for Victory", 1982
- Asprey, Robert B. "Guerrilla Warfare" (Encyclopedia Britannica – EB), 1972
- Asprey, Robert B. "Tactics" (EB), 1972
- Asprey, Robert B. "War in the Shadows" (two volumes), 1975
- Atkins, P. W. "The Second Law", 1984
- Atkinson, Alexander "Social Order and the General Theory of Strategy", 1981
- Axelrod, Robert "The Evolution of Cooperation", 1984
- Balck, William "The Development of Tactics", 1922
- Baldwin, Hanson W. "Tiger Jack", 1979
- Barnett, Correlli "Bonaparte", 1978
- Barron, John "KGB: The Secret Work of Soviet Secret Agents", 1974
- Bateson, Gregory "Mind and Nature", 1979
- Bayerlein, Fritz "With the Panzers in Russia 1941 & 43" (Marine Corps Gazette), December 1954
- Beaufre, Andre "An Introduction to Strategy", 1965
- Beaufre, Andre "Strategy of Action", 1967
- Becker, Ernest "The Structure of Evil", 1968
- Beesley, Patrick "Very Special Intelligence", 1977
- Beesley, Patrick "Room 40", 1982
- Betts, Richard K. "Surprise Attack", 1982
- Beveridge, W.I.B. "The Art of Scientific Investigation", 1957
- Bloom, Allan "The Closing of the American Mind", 1987
- Blumentritt, G. "Experience Gained from the History of War on the Subject of Command Technique", Jan 1947
- Blumentritt, G. "Operations in Darkness and Smoke", 1952
- Bohm, David & Peat, F. David "Science, Order and Creativity", 1987
- Bretnor, Reginald "Decisive Warfare", 1969
- Briggs, John & Peat, F. David "Looking Glass Universe", 1984
- Briggs, John & Peat, F. David "Turbulent Mirror", 1989
- Bronowski, Jacob "The Identity of Man", 1971
- Bronowski, Jacob "The Ascent of Man", 1973

- Bronowski, Jacob "A Sense of the Future", 1977
- Bronowski, Jacob "The Origins of Knowledge and Imagination", 1978
- Brown, Anthony Cave "Bodyguard of Lies", 1975
- Brown, G. Spencer "Laws of Form", 1972
- Brownlow, Donald Grey "Panzer Baron", 1975
- Brzezinski, Zbigniew "Game Plan", 1986
- Callendar, H.L. & Andrews, D.H. "Heat, Entropy and Information" (EB), 1972
- Calvocoressi, Peter "Top Secret Ultra", 1980
- Campbell, Jeremy "Grammatical Man", 1982
- Capra, Fritjof "The Tao of Physics", 1976
- Card, Orson Scott "Ender's Game", 1985
- Careri, Giorgio "Order and Disorder in Matter", 1984
- Carver, Michael "The Apostles of Mobility", 1979
- Chambers, James "The Devil's Horsemen", 1979
- Chaliand, Gerard (editor) "Guerrilla Strategies", 1982
- Chandler, David G. "The Campaigns of Napoleon", 1966
- Chandler, David G. "Atlas of Military Strategy", 1980
- Cincinnatus "Self-Destruction", 1981
- Clausewitz, Carl von "Principles of War" (translated by Hans W. Gatske, 1942), 1812
- Clausewitz, Carl von "War, Politics and Power" (translated by Edward M. Collins, 1962)
- Clausewitz, Carl von "On War" (translated by M. Howard & P. Paret, 1976), 1832
- Cline, Barbara Lovett "Men Who Made a New Physics", 1965/1987
- Cline, Ray S. "Secrets, Spies and Scholars", 1976
- Clutterbuck, Richard "Guerrillas and Terrorists", 1977
- Cole, K.C. "Sympathetic Vibrations", 1984
- Colin, Jean "The Transformations of War", 1912
- Conant, James Bryant "Two Modes of Thought", 1970
- Conway, James "Mr. Secret Weapon" (Washington Post Magazine), 15 May 1982
- Cooper, Matthew "The German Army 1933-1945", 1978
- Corbett, Julian S. "Some Principles of Maritime Strategy", 1911
- Crease, Robert P. & Mann, Charles C. "The Second Creation", 1986
- Cruickshank, Charles "Deception in World War II", 1979

- Daniel, Donald C. & Herbig, Katherine L. "Strategic Military Deception", 1982
- Davies, Paul "The Cosmic Blueprint", 1988
- Davies, W.J.K. "German Army Handbook 1932-1945", 1973
- Dawkins, Richard "The Selfish Gene", 1976
- Dawkins, Richard "The Blind Watchmaker", 1986
- DeBono, Edward "New Think", 1971
- DeBono, Edward "Lateral Thinking: Creativity Step by Step", 1973
- Deichmann, D. Paul "German Air Force Operations in Support of the Army", 1962
- Des Pres, Terrence "The Survivor", 1976
- Despres, J.; Dzirkals, L.; Whaley, B. "Timely Lessons from History: The Manchurian Model for Soviet Strategy"
- Doughty, R. A. "The Evolution of U.S. Army Tactical Doctrine, 1946-76" (Leavenworth Papers #1), August 1979
- Downing, David "The Devil's Virtuosos: German Generals at War 1940-45", 1977
- Drexler, K. Eric "Engines of Creation", 1987
- Dupuy, T.N. "The Military Life of Genghis, Khan of Khans", 1969
- Dupuy & Dupuy (R.E. & T.N.) "Encyclopedia of Military History", 1977
- Dupuy, T.N. "A Genius for War", 1977
- Durant, Will & Ariel "The Lessons of History", 1968
- Dyson, Freeman "Disturbing the Universe", 1979
- Dzirkals, L. F. "Lightning War in Manchuria: Soviet Military Analysis of the 1945 Far East Campaign", Jul 1975
- Earle, Edward Mead, et al "Makers of Modern Strategy", 1943
- Ekeland, Ivar "Mathematics and the Unexpected", 1988
- English, John A. "A Perspective on Infantry", 1981
- Fall, Barnard B. "Street Without Joy", 1964
- Fall, Barnard B. "Last Reflections on a War", 1967
- Falls, Cyril "The Art of War from the Age of Napoleon to the Present Day", 1961
- Farago, Ladislav "The Game of the Foxes", 1971
- Ferguson, Marilyn "The Aquarian Conspiracy", 1980
- Fitzgerald, Frances "Fire in the Lake", 1972
- Foster, David "The Intelligent Universe", 1975
- Foster, Richard N. "Innovation: The Attacker's Advantage", 1986
- Freytag-Loringhoven, Hugo von "The Power of Personality in War", (Army War College, 1938), 1911
- Fromm, Erich "The Crisis of Psychoanalysis", 1971

- Fuller, J.F.C. "Grant and Lee", 1932/1957
- Fuller, J.F.C. "The Conduct of War, 1789-1961", 1961
- Gabriel, Richard A. & Savage, Paul L. "Crisis in Command", 1978
- Gabriel, Richard A. & Gal, Reuven "The IDF Officer: Linchpin in Unit Cohesion", (Army) January 1984
- Gamow, George "Thirty Years That Shook Physics", 1966
- Gardner, Howard "The Quest for Mind", 1974
- Gardner, Howard "The Mind's New Science", 1985
- Gardner, John W. "Morale", 1978
- Gardner, Martin "The Computer as Scientist" (Discover), June 1983
- Georgescu-Roegen, Nicholas "The Entropy Law and the Economic Process", 1971
- Gleick, James "Exploring the Labyrinth of the Mind" (New York Times Magazine), 21 August 1983
- Gleick, James "Chaos", 1987
- Godel, Kurt "On Formally Undecidable Propositions of the Principia Mathematica and Related Systems", pages 3-38, "The Undecidable", 1965
- Goleman, Daniel "Vital Lies, Simple Truths", 1985
- Goodenough, Simon & Deighton, Len "Tactical Genius in Battle", 1979
- Gribbin, John "In Search of Schrodinger's Cat", 1984
- Griffin, Gary B. "The Directed Telescope: A Traditional Element of Effective Command" (Combat Studies Institute), 20 May 1985
- Griffith, Paddy "Forward into Battle", 1981
- Grigg, John "1943 The Victory That Never Was", 1980
- Guderian, Heinz "Panzer Leader", 1952
- Guevara, Che "Guerrilla Warfare", 1961
- Hall, Edward T. "Beyond Culture", 1976
- Handel, Michael I. "The Yom Kippur War and the Inevitability of Surprise" (Int'l Studies Quarterly), Sept 1977
- Handel, Michael I. "Clausewitz in the Age of Technology" (The Journal of Strategic Studies), June/Sept 1986
- Hao Wang "Metalogic" (EB), 1988
- Hawking, Stephen W. "A Brief History of Time", 1988
- Heider, John "The Tao of Leadership", 1985
- Heilbroner, Robert L. "An Inquiry into the Human Prospect", 1974
- Heilbroner, Robert L. "Marxism: For and Against", 1980
- Heisenberg, Werner "Physics and Philosophy", 1962

- Heisenberg, Werner "Across the Frontiers", 1974
- Herbert, Nick "Quantum Reality", 1987
- Herrington, Stuart A. "Silence Was a Weapon", 1982
- Hodges, Andrew "Alan Turing: The Enigma", 1983
- Hoffer, Eric "The True Believer", 1951
- Holmes, W.J. "Double-Edged Secrets", 1979
- Howard, Michael "The Causes of Wars", 1983
- Hoyle, Fred "Encounter with the Future", 1968
- Hoyle, Fred "The New Face of Science", 1971
- Hoyt, Edwin P. "Guerilla", 1981
- Humble, Richard "Hitler's Generals", 1974
- Irving, David "The Trail of the Fox", 1977
- Isby, David C. "Modern Infantry Tactics, 1914-74" (Strategy and Tactics), Sept/Oct 1974
- Johnson, George "Machinery of the Mind", 1986
- Jomini, "The Art of War" (translated by G.H. Mendell & W.P. Craigbill, 1862), 1836
- Jomini, "Summary of the Art of War" (edited by J.D. Hittle, 1947), 1838
- Jones, Roger S. "Physics As Metaphor", 1982
- Jones, R.V. "Intelligence and Deception" (lecture), 29 November 1979
- Kahn, David "The Codebreakers", 1967
- Kahn, David "Hitler's Spies", 1978
- Kaku, Michio & Trainer, Jennifer "Beyond Einstein", 1987
- Karnow, Stanley "In Vietnam, the Enemy Was Right Beside Us" (Washington Star), 22 March 1981
- Karnow, Stanley "Vietnam: A History", 1983
- Keegan, John "The Face of Battle", 1977
- Kemeny, John G. "Semantics in Logic" (EB), 1972
- Kennedy, Marilyn Moats "Powerbase: How to Build It; How to Keep It", 1984
- Kesslering, Albert, et al "Manual for Command and Combat Employment of Smaller Units" (Based on German Experiences in World War II), 1952
- Kitson, Frank "Low Intensity Operations", 1971
- Kline, Morris "Mathematics: The Loss of Certainty", 1980
- Kohn, Hans & Hazard, John N. "Communism" (EB), 1972
- Kramer, Edna E. "The Nature and Growth of Modern Mathematics", 1974

- Krepinevich, Andrew F. Jr. "The Army and Vietnam", 1986
- Kuhn, Thomas S. "The Structure of Scientific Revolutions", 1970
- Lamb, Harold "Genghis Khan", 1927
- Landauer, Carl "Marxism" (EB), 1972
- Lanza, Conrad H. "Napoleon and Modern War, His Military Maxims", 1943
- Laqueur, Walter "Guerrilla", 1976
- Laqueur, Walter (editor) "The Guerrilla Reader", 1977
- Lawrence, T.E. "Seven Pillars of Wisdom", 1935
- Layzer, David "The Arrow of Time" (Scientific American), December 1975
- LeBoeuf, Michael "GMP* The Greatest Management Principle in the World", 1985
- Leonard, George "The Silent Pulse", 1978
- Levinson, Harry "The Exceptional Executive", 1971
- Lewin, Ronald "Ultra Goes to War", 1978
- Liddell Hart, B.H. "A Science of Infantry Tactics Simplified", 1926
- Liddell Hart, B.H. "The Future of Infantry", 1933
- Liddell Hart, B.H. "The Ghost of Napoleon", 1934
- Liddell Hart, B.H. "The German Generals Talk", 1948
- Liddell Hart, B.H. "Strategy", 1967
- Liddell Hart, B.H. "History of the Second World War" (two volumes), 1970
- Lorenz, Konrad "Behind the Mirror" (translated by Ronald Taylor, 1977), 1973
- Lupfer, Timothy T. "The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War" (Leavenworth Papers #4), July 1981
- Machiavelli, Niccolo "The Prince", 1516
- Machiavelli, Niccolo "The Discourses", 1519
- Macksey, Kenneth "Panzer Division", 1968
- Macksey, Kenneth "Guderian: Creator of the Blitzkrieg", 1976
- Maltz, Maxwell "Psycho-Cybernetics", 1971
- Mann, Charles C. "The Man With All the Answers" (The Atlantic), Jan 1990
- Manstein, Erich von "Lost Victories", 1958
- Mao Tse-Tung "On Guerrilla Warfare", (translated by S.B. Griffith, 1961), 1937
- Mao Tse-Tung "Basic Tactics" (translated by Stuart R. Schram, 1966), 1938
- Mao Tse-Tung "Selected Military Writings", 1963

- Mao Tse-Tung "Four Essays on China and World Communism", 1972
- Marchetti, Victor & Marks, John "The CIA and the Cult of Intelligence", 1974/1980
- Marshall, S.L.A. "Men Against Fire", 1947
- Marshall, S.L.A. "The Soldiers Load and The Mobility of a Nation", 1950
- Martin, David C. "Wilderness of Mirrors", 1980
- Masterman, John C. "The Double-Cross System", 1972
- Matloff, Maurice "Strategy" (EB), 1972
- May, Rollo "The Courage to Create", 1975/1976
- McAulifee, Kathleen "Get Smart: Controlling Chaos" (Omni), Feb 1990
- McWhiney, Grady & Jamieson, Perry D. "Attack and Die", 1982
- Mellenthin, F.W. von "Panzer Battles", 1956
- Mellenthin, F.W. von "German Generals of World War II", 1977
- Mellenthin, F.W. von "Armored Warfare in World War II" (conference), 10 May 1979
- Mendel, Arthur P. (editor) "Essential Works of Marxism", 1961
- Messenger, Charles "The Blitzkrieg Story", 1976
- Mikheyev, Dmitry "A Model of Soviet Mentality" (presentation), March 1985
- Miksche, F.O. "Blitzkrieg", 1941
- Miksche, F.O. "Atomic Weapons and Armies", 1955
- Miller, Russell "The Commandos" (Time-Life Books), 1981
- Minsky, Marvin "The Society of Mind", 1986
- Montross, Lynn "War Through the Ages", 1960
- Morris, E.; Johnson, C.; Chant, C.; Wilmott, H.P. "Weapons and Warfare of the 20th Century", 1976
- Musashi, Miyamoto "The Book of Five Rings" (translated by Victor Harris, 1974), 1645
- Musashi, Miyamoto "The Book of Five Rings" (translated by Nihon Services, 1982), 1645
- Nagel, Ernest & Newman, James R. "Godel's Proof", 1958
- Oman, C.W.C. "The Art of War in the Middle Ages" (edited and revised by John H. Beeler, 1953), 1885
- Ortega y Gasset, Jose, "The Revolt of the Masses" (anonymous translation, 1932), 1930
- Osborne, Alex F. "Applied Imagination", 1963
- Ouchi, William "Theory Z", 1981
- Pagels, Heinz R. "The Cosmic Code", 1982
- Pagels, Heinz R. "Perfect Symmetry", 1985
- Pagels, Heinz R. "The Dreams of Reason", 1988

- Palmer, Bruce Jr. "The 25 Year War", 1984
- Paret, Peter "Clausewitz and the State", 1976
- Pascale, Richard T. & Athos, Anthony G. "The Art of Japanese Management", 1981
- Patrick, S. B. "Combined Arms Combat Operations in the 20th Century" (Strategy and Tactics), Sept/Oct 1974
- Pauker, Guy J. "Insurgency" (EB), 1972
- Pearce, Joseph Chilton "The Crack in the Cosmic Egg", 1973
- Pearce, Joseph Chilton "Exploring the Crack in the Cosmic Egg", 1975
- Peter, Rozsa "Playing with Infinity", 1957
- Peters, Thomas J. & Waterman, Robert H., Jr. "In Search of Excellence", 1982
- Phillips, T.R. (editor) "Roots of Strategy", 1940/1985
- Piaget, Jean "Structuralism", 1971
- Pike, Douglas "PAVN: Peoples Army of Vietnam", 1986
- Pincher, Chapman "Their Trade is Treachery", 1982
- Polanyi, Michael "The Tacit Dimension", 1966
- Polanyi, Michael "Knowing and Being", 1969
- Polkinghorne, J.C. "The Quantum World", 1984
- Pomeroy, William J. (editor) "Guerrilla Warfare and Marxism", 1968
- Powers, Thomas "The Man Who Kept the Secrets", 1979
- Prigogine, Ilya & Stengers, Isabelle "Order Out of Chaos", 1984
- Pustay, John S. "Counterinsurgency Warfare", 1965
- Rae, Alastair I.M. "Quantum Physics: illusion or reality", 1986
- Reid, T.R. "Birth of a New Idea" (Washington Post Outlook), 25 July 1982
- Rejai, M. "Mao Tse-Tung On Revolution and War", 1976
- Restak, Richard M. "The Brain: The Last Frontier", 1980
- Rifkin, Jeremy (with Ted Howard) "Entropy – A New World View", 1980
- Rommel, Erwin "Infantry Attacks" (translated by G.E. Kidde, 1944), 1937
- Rosen, Ismond "Genesis", 1974
- Ross, Steven "Rethinking Thinking" (Modern Maturity), Feb-Mar 1990
- Rothenberg, Gunther E. "The Art of Warfare in the Age of Napoleon", 1978
- Rowan, Roy "The Intuitive Manager", 1986
- Rucker, Rudy "Infinity and the Mind", 1982
- Rucker, Rudy "Mind Tools", 1987

- Rushbrooke, George Stanley "Statistical Mechanics" (EB), 1972
- Russell, Francis "The Secret War" (Time-Life Books), 1981
- Satter, David "Soviet Threat is One of Ideas More Than Arms" (Wall Street Journal), 23 May 1983
- Savkin, V. YE. "The Basic Principles of Operational Art and Tactics" (A Soviet View), 1972
- Sella, Amnon "Barbarossa: Surprise Attack and Communication" (Journal of Contemporary History), 1978
- Senger und Etterlin, Frido von "Neither Fear Nor Hope", 1963
- Shanker, S. G. (editor) "Godel's Theorem in Focus", 1988
- Shannon, Claude E. "Information Theory" (EB), 1972
- Sidey, Hugh "Playing an Assassin Like a Fish" (Washington Star), 14 June 1981
- Sidorenko, A.A. "The Offensive" (A Soviet View), 1970
- Singh, Baljitt & Mei, Ko-Wang "Modern Guerrilla Warfare", 1971
- Singh, Jagjit "Great Ideas of Modern Mathematics: Their Nature and Use", 1959
- Skinner, B.F. "Beyond Freedom and Dignity", 1972
- Sprey, P.M. "Taped Conversation with General Hermann Balck" (for Battelle), 12 January and 13 April 1979
- Sprey, P.M. "Taped Conversation with Lt. General Heinz Gaedcke", (for Battelle), 12 April 1979
- Stevenson, William "A Man Called Intrepid", 1976
- Stewart, Ian "Does God Play Dice", 1989
- Strausz-Hupe, R.; Kintner, W. R.; Dougherty, J. E.; Cottrell, A. J. "Protracted Conflict", 1959/1963
- Summers, Harry G. Jr. "On Strategy: The Vietnam War in Context", 1981
- Sun Tzu "The Art of War" (translated by S.B. Griffith, 1971), about 400 B.C.
- Sun Tzu "The Art of War" (edited by James Clavell, 1983), about 500 B.C.
- Sun Tzu "The Art of War" (translated by Thomas Cleary, 1988), about 400 B.C.
- Taber, Robert "The War of the Flea", 1965
- Tang Zi-Chang "Principles of Conflict" (Recompilation of Sun Zi's Art of War), 1969
- Tao Hanzhang "Sun Tzu's Art of War", 1987
- Thayer, Charles W. "Guerrilla", 1961
- Thompson, R.W. "D-Day", 1968
- Thompson, William Irwin "At the Edge of History", 1972
- Thompson, William Irwin "Evil and World Order", 1976
- Thompson, William Irwin "Darkness and Scattered Light", 1978
- Toffler, Alvin "Future Shock", 1970
- Van Creveld, Martin "Supplying War", 1977

- Van Creveld, Martin "Fighting Power: German Military Performance, 1914–1945", December 1980
- Van Creveld, Martin "Command", 1982
- Vigor, P.H. "Soviet Blitzkrieg Theory" (A British View), 1983
- Vo Nguyen Giap "Peoples War Peoples Army", 1962
- Vo Nguyen Giap "How We Won the War", 1976
- Waismann, Friedrich "Introduction to Mathematical Thinking", 1959
- Wallace, Mike "Inside Yesterday: Target USA" (for CBS News), 21 August 1979
- Watts, Alan "The Book", 1972
- Watts, Alan "Tao: The Watercourse Way", 1975
- Wernick, Robert "Blitzkrieg" (Time-Life Books), 1976
- Whiting, Charles "Patton", 1970
- Wilczek, Frank & Devine, Betsy "Longing for the Harmonies", 1988
- Wilson, Edward O. "On Human Nature", 1978
- Wing, R.L. "The Art of Strategy", 1988
- Winterbotham, F.W. "The Ultra Secret", 1975
- Wintringham, Tom "The Story of Weapons and Tactics", 1943
- Wolf, Eric R. "Peasant Wars of the Twentieth Century", 1969
- Wolf, Fred Alan "Taking the Quantum Leap", 1981
- Wylie, J.C. "Military Strategy", 1967
- Wynne, G.C. "If Germany Attacks", 1940
- Yukawa, Hideki "Creativity and Intuition", 1973
- Zukav, Gary "The Dancing Wu Li Masters", 1979

SOURCES BY INSTITUTION

- BDM "Generals Balck and Von Mellenthin on Tactics: Implications for Military Doctrine", 19 December 1980
- German Army Regulation 100/100 "Command and Control in Battle", September 1973
- German Army Regulation 100/200 "Army Command and Control System", August 1972
- National Defense University "The Art and Practice of Military Strategy", 1984
- ORD/CIA, "Deception Maxims: Fact and Folklore", April 1980
- U.S. Army FM 100-5 "Operations", July 1976
- U.S. Army FM 100-5 "Operations", 20 August 1982
- U.S. Army FM 100-5 "Operations", 5 May 1986
- U.S. Army Pamphlet 20-233 "German Defense Tactics Against Russian Breakthroughs", October 1951
- U.S. Army Pamphlet 20-269 "Small Unit Actions During the German Campaign in Russia", July 1953
- Westinghouse "I Am the Punishment of God" (Westinghouse Integrated Logistic Support #5)
- West Point Department of Military Art and Engineering, "Jomini, Clausewitz and Schlieffen", 1954
- West Point Department of Military Art and Engineering, "Summaries of Selected Military Campaigns", 1956

SOURCES

SOURCES BY AUTHOR

- Adcock, F.E. "The Greek and Macedonian Art of War", 1957
- Alger, John I. "The Quest for Victory", 1982
- Asprey, Robert B. "Guerrilla Warfare" (Encyclopedia Britannica - EB), 1972
- Asprey, Robert B. "Tactics" (EB), 1972
- Asprey, Robert B. "War in the Shadows" (two volumes), 1975
- Atkins, P. W. "The Second Law", 1984
- Atkinson, Alexander "Social Order and the General Theory of Strategy", 1981
- Axelrod, Robert "The Evolution of Cooperation", 1984
- Balck, William "The Development of Tactics", 1922
- Baldwin, Hanson W. "Tiger Jack", 1979
- Barnett, Correlli "Bonaparte", 1978
- Barron, John "KGB: The Secret Work of Soviet Secret Agents", 1974
- Bateson, Gregory "Mind and Nature", 1979
- Bayerlein, Fritz "With the Panzers in Russia 1941 & 43" (Marine Corps Gazette), December 1954
- Beaufre, Andre "An Introduction to Strategy", 1965
- Beaufre, Andre "Strategy of Action", 1967
- Becker, Ernest "The Structure of Evil", 1968
- Beesley, Patrick "Very Special Intelligence", 1977
- Beesley, Patrick "Room 40", 1982
- Betts, Richard K. "Surprise Attack", 1982
- Beveridge, W.I.B. "The Art of Scientific Investigation", 1957
- Bloom, Allan "The Closing of the American Mind", 1987
- Blumentritt, G. "Experience Gained from the History of War on the Subject of Command Technique", Jan 1947
- Blumentritt, G. "Operations in Darkness and Smoke", 1952
- Bohm, David & Peat, F. David "Science, Order and Creativity", 1987
- Bretnor, Reginald "Decisive Warfare", 1969
- Briggs, John & Peat, F. David "Looking Glass Universe", 1984
- Briggs, John & Peat, F. David "Turbulent Mirror", 1989
- Bronowski, Jacob "The Identity of Man", 1971
- Bronowski, Jacob "The Ascent of Man", 1973

- Bronowski, Jacob "A Sense of the Future", 1977
- Bronowski, Jacob "The Origins of Knowledge and Imagination", 1978
- Brown, Anthony Cave "Bodyguard of Lies", 1975
- Brown, G. Spencer "Laws of Form", 1972
- Brownlow, Donald Grey "Panzer Baron", 1975
- Brzezinski, Zbigniew "Game Plan", 1986
- Callendar, H.L. & Andrews, D.H. "Heat, Entropy and Information" (EB), 1972
- Calvocoressi, Peter "Top Secret Ultra", 1980
- Campbell, Jeremy "Grammatical Man", 1982
- Capra, Fritjof "The Tao of Physics", 1976
- Card, Orson Scott "Ender's Game", 1985
- Careri, Giorgio "Order and Disorder in Matter", 1984
- Carver, Michael "The Apostles of Mobility", 1979
- Chambers, James "The Devil's Horsemen", 1979
- Chaliand, Gerard (editor) "Guerrilla Strategies", 1982
- Chandler, David G. "The Campaigns of Napoleon", 1966
- Chandler, David G. "Atlas of Military Strategy", 1980
- Cincinnatus "Self-Destruction", 1981
- Clausewitz, Carl von "Principles of War" (translated by Hans W. Gatske, 1942), 1812
- Clausewitz, Carl von "War, Politics and Power" (translated by Edward M. Collins, 1962)
- Clausewitz, Carl von "On War" (translated by M. Howard & P. Paret, 1976), 1832
- Cline, Barbara Lovett "Men Who Made a New Physics", 1965/1987
- Cline, Ray S. "Secrets, Spies and Scholars", 1976
- Clutterbuck, Richard "Guerrillas and Terrorists", 1977
- Cole, K.C. "Sympathetic Vibrations", 1984
- Colin, Jean "The Transformations of War", 1912
- Conant, James Bryant "Two Modes of Thought", 1970
- Conway, James "Mr. Secret Weapon" (Washington Post Magazine), 15 May 1982
- Cooper, Matthew "The German Army 1933-1945", 1978
- Corbett, Julian S. "Some Principles of Maritime Strategy", 1911
- Crease, Robert P. & Mann, Charles C. "The Second Creation", 1986
- Cruickshank, Charles "Deception in World War II", 1979

- Daniel, Donald C. & Herbig, Katherine L. "Strategic Military Deception", 1982
- Davies, Paul "The Cosmic Blueprint", 1988
- Davies, W.J.K. "German Army Handbook 1932-1945", 1973
- Dawkins, Richard "The Selfish Gene", 1976
- Dawkins, Richard "The Blind Watchmaker", 1986
- DeBono, Edward "New Think", 1971
- DeBono, Edward "Lateral Thinking: Creativity Step by Step", 1973
- Deichmann, D. Paul "German Air Force Operations in Support of the Army", 1962
- Des Pres, Terrence "The Survivor", 1976
- Despres, J.; Dzirkals, L.; Whaley, B. "Timely Lessons from History: The Manchurian Model for Soviet Strategy"
- Doughty, R. A. "The Evolution of U.S. Army Tactical Doctrine, 1946-76" (Leavenworth Papers #1), August 1979
- Downing, David "The Devil's Virtuosos: German Generals at War 1940-45", 1977
- Drexler, K. Eric "Engines of Creation", 1987
- Dupuy, T.N. "The Military Life of Genghis, Khan of Khans", 1969
- Dupuy & Dupuy (R.E. & T.N.) "Encyclopedia of Military History", 1977
- Dupuy, T.N. "A Genius for War", 1977
- Durant, Will & Ariel "The Lessons of History", 1968
- Dyson, Freeman "Disturbing the Universe", 1979
- Dzirkals, L. F. "Lightning War in Manchuria: Soviet Military Analysis of the 1945 Far East Campaign", Jul 1975
- Earle, Edward Mead, et al "Makers of Modern Strategy", 1943
- Ekeland, Ivar "Mathematics and the Unexpected", 1988
- English, John A. "A Perspective on Infantry", 1981
- Fall, Barnard B. "Street Without Joy", 1964
- Fall, Barnard B. "Last Reflections on a War", 1967
- Falls, Cyril "The Art of War from the Age of Napoleon to the Present Day", 1961
- Farago, Ladislav "The Game of the Foxes", 1971
- Ferguson, Marilyn "The Aquarian Conspiracy", 1980
- Fitzgerald, Frances "Fire in the Lake", 1972
- Foster, David "The Intelligent Universe", 1975
- Foster, Richard N. "Innovation: The Attacker's Advantage", 1986
- Freytag-Loringhoven, Hugo von "The Power of Personality in War", (Army War College, 1938), 1911
- Fromm, Erich "The Crisis of Psychoanalysis", 1971

- Fuller, J.F.C. "Grant and Lee", 1932/1957
- Fuller, J.F.C. "The Conduct of War, 1789-1961", 1961
- Gabriel, Richard A. & Savage, Paul L. "Crisis in Command", 1978
- Gabriel, Richard A. & Gal, Reuven "The IDF Officer: Linchpin in Unit Cohesion", (Army) January 1984
- Gamow, George "Thirty Years That Shook Physics", 1966
- Gardner, Howard "The Quest for Mind", 1974
- Gardner, Howard "The Mind's New Science", 1985
- Gardner, John W. "Morale", 1978
- Gardner, Martin "The Computer as Scientist" (Discover), June 1983
- Georgescu-Roegen, Nicholas "The Entropy Law and the Economic Process", 1971
- Gleick, James "Exploring the Labyrinth of the Mind" (New York Times Magazine), 21 August 1983
- Gleick, James "Chaos", 1987
- Godel, Kurt "On Formally Undecidable Propositions of the Principia Mathematica and Related Systems", pages 3-38, "The Undecidable", 1965
- Goleman, Daniel "Vital Lies, Simple Truths", 1985
- Goodenough, Simon & Deighton, Len "Tactical Genius in Battle", 1979
- Gribbin, John "In Search of Schrodinger's Cat", 1984
- Griffin, Gary B. "The Directed Telescope: A Traditional Element of Effective Command" (Combat Studies Institute), 20 May 1985
- Griffith, Paddy "Forward into Battle", 1981
- Grigg, John "1943 The Victory That Never Was", 1980
- Guderian, Heinz "Panzer Leader", 1952
- Guevara, Che "Guerrilla Warfare", 1961
- Hall, Edward T. "Beyond Culture", 1976
- Handel, Michael I. "The Yom Kippur War and the Inevitability of Surprise" (Int'l Studies Quarterly), Sept 1977
- Handel, Michael I. "Clausewitz in the Age of Technology" (The Journal of Strategic Studies), June/Sept 1986
- Hao Wang "Metalogic" (EB), 1988
- Hawking, Stephen W. "A Brief History of Time", 1988
- Heider, John "The Tao of Leadership", 1985
- Heilbroner, Robert L. "An Inquiry into the Human Prospect", 1974
- Heilbroner, Robert L. "Marxism: For and Against", 1980
- Heisenberg, Werner "Physics and Philosophy", 1962

- Heisenberg, Werner "Across the Frontiers", 1974
- Herbert, Nick "Quantum Reality", 1987
- Herrington, Stuart A. "Silence Was a Weapon", 1982
- Hodges, Andrew "Alan Turing: The Enigma", 1983
- Hoffer, Eric "The True Believer", 1951
- Holmes, W.J. "Double-Edged Secrets", 1979
- Howard, Michael "The Causes of Wars", 1983
- Hoyle, Fred "Encounter with the Future", 1968
- Hoyle, Fred "The New Face of Science", 1971
- Hoyt, Edwin P. "Guerilla", 1981
- Humble, Richard "Hitler's Generals", 1974
- Irving, David "The Trail of the Fox", 1977
- Isby, David C. "Modern Infantry Tactics, 1914-74" (Strategy and Tactics), Sept/Oct 1974
- Johnson, George "Machinery of the Mind", 1986
- Jomini, "The Art of War" (translated by G.H. Mendell & W.P. Craigbill, 1862), 1836
- Jomini, "Summary of the Art of War" (edited by J.D. Hittle, 1947), 1838
- Jones, Roger S. "Physics As Metaphor", 1982
- Jones, R.V. "Intelligence and Deception" (lecture), 29 November 1979
- Kahn, David "The Codebreakers", 1967
- Kahn, David "Hitler's Spies", 1978
- Kaku, Michio & Trainer, Jennifer "Beyond Einstein", 1987
- Karnow, Stanley "In Vietnam, the Enemy Was Right Beside Us" (Washington Star), 22 March 1981
- Karnow, Stanley "Vietnam: A History", 1983
- Keegan, John "The Face of Battle", 1977
- Kemeny, John G. "Semantics in Logic" (EB), 1972
- Kennedy, Marilyn Moats "Powerbase: How to Build It; How to Keep It", 1984
- Kesslering, Albert, et al "Manual for Command and Combat Employment of Smaller Units" (Based on German Experiences in World War II), 1952
- Kitson, Frank "Low Intensity Operations", 1971
- Kline, Morris "Mathematics: The Loss of Certainty", 1980
- Kohn, Hans & Hazard, John N. "Communism" (EB), 1972
- Kramer, Edna E. "The Nature and Growth of Modern Mathematics", 1974

- Krepinevich, Andrew F. Jr. "The Army and Vietnam", 1986
- Kuhn, Thomas S. "The Structure of Scientific Revolutions", 1970
- Lamb, Harold "Genghis Khan", 1927
- Landauer, Carl "Marxism" (EB), 1972
- Lanza, Conrad H. "Napoleon and Modern War, His Military Maxims", 1943
- Laqueur, Walter "Guerrilla", 1976
- Laqueur, Walter (editor) "The Guerrilla Reader", 1977
- Lawrence, T.E. "Seven Pillars of Wisdom", 1935
- Layzer, David "The Arrow of Time" (Scientific American), December 1975
- LeBoeuf, Michael "GMP* The Greatest Management Principle in the World", 1985
- Leonard, George "The Silent Pulse", 1978
- Levinson, Harry "The Exceptional Executive", 1971
- Lewin, Ronald "Ultra Goes to War", 1978
- Liddell Hart, B.H. "A Science of Infantry Tactics Simplified", 1926
- Liddell Hart, B.H. "The Future of Infantry", 1933
- Liddell Hart, B.H. "The Ghost of Napoleon", 1934
- Liddell Hart, B.H. "The German Generals Talk", 1948
- Liddell Hart, B.H. "Strategy", 1967
- Liddell Hart, B.H. "History of the Second World War" (two volumes), 1970
- Lorenz, Konrad "Behind the Mirror" (translated by Ronald Taylor, 1977), 1973
- Lupfer, Timothy T. "The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War" (Leavenworth Papers #4), July 1981
- Machiavelli, Niccolo "The Prince", 1516
- Machiavelli, Niccolo "The Discourses", 1519
- Macksey, Kenneth "Panzer Division", 1968
- Macksey, Kenneth "Guderian: Creator of the Blitzkrieg", 1976
- Maltz, Maxwell "Psycho-Cybernetics", 1971
- Mann, Charles C. "The Man With All the Answers" (The Atlantic), Jan 1990
- Manstein, Erich von "Lost Victories", 1958
- Mao Tse-Tung "On Guerrilla Warfare", (translated by S.B. Griffith, 1961), 1937
- Mao Tse-Tung "Basic Tactics" (translated by Stuart R. Schram, 1966), 1938
- Mao Tse-Tung "Selected Military Writings", 1963

- Mao Tse-Tung "Four Essays on China and World Communism", 1972
- Marchetti, Victor & Marks, John "The CIA and the Cult of Intelligence", 1974/1980
- Marshall, S.L.A. "Men Against Fire", 1947
- Marshall, S.L.A. "The Soldiers Load and The Mobility of a Nation", 1950
- Martin, David C. "Wilderness of Mirrors", 1980
- Masterman, John C. "The Double-Cross System", 1972
- Matloff, Maurice "Strategy" (EB), 1972
- May, Rollo "The Courage to Create", 1975/1976
- McAuliffe, Kathleen "Get Smart: Controlling Chaos" (Omni), Feb 1990
- McWhiney, Grady & Jamieson, Perry D. "Attack and Die", 1982
- Mellenthin, F.W. von "Panzer Battles", 1956
- Mellenthin, F.W. von "German Generals of World War II", 1977
- Mellenthin, F.W. von "Armored Warfare in World War II" (conference), 10 May 1979
- Mendel, Arthur P. (editor) "Essential Works of Marxism", 1961
- Messenger, Charles "The Blitzkrieg Story", 1976
- Mikheyev, Dmitry "A Model of Soviet Mentality" (presentation), March 1985
- Miksche, F.O. "Blitzkrieg", 1941
- Miksche, F.O. "Atomic Weapons and Armies", 1955
- Miller, Russell "The Commandos" (Time-Life Books), 1981
- Minsky, Marvin "The Society of Mind", 1986
- Montross, Lynn "War Through the Ages", 1960
- Morris, E.; Johnson, C.; Chant, C.; Wilmott, H.P. "Weapons and Warfare of the 20th Century", 1976
- Musashi, Miyamoto "The Book of Five Rings" (translated by Victor Harris, 1974), 1645
- Musashi, Miyamoto "The Book of Five Rings" (translated by Nihon Services, 1982), 1645
- Nagel, Ernest & Newman, James R. "Godel's Proof", 1958
- Oman, C.W.C. "The Art of War in the Middle Ages" (edited and revised by John H. Beeler, 1953), 1885
- Ortega y Gasset, Jose, "The Revolt of the Masses" (anonymous translation, 1932), 1930
- Osborne, Alex F. "Applied Imagination", 1963
- Ouchi, William "Theory Z", 1981
- Pagels, Heinz R. "The Cosmic Code", 1982
- Pagels, Heinz R. "Perfect Symmetry", 1985
- Pagels, Heinz R. "The Dreams of Reason", 1988

- Palmer, Bruce Jr. "The 25 Year War", 1984
- Paret, Peter "Clausewitz and the State", 1976
- Pascale, Richard T. & Athos, Anthony G. "The Art of Japanese Management", 1981
- Patrick, S. B. "Combined Arms Combat Operations in the 20th Century" (Strategy and Tactics), Sept/Oct 1974
- Pauker, Guy J. "Insurgency" (EB), 1972
- Pearce, Joseph Chilton "The Crack in the Cosmic Egg", 1973
- Pearce, Joseph Chilton "Exploring the Crack in the Cosmic Egg", 1975
- Peter, Rozsa "Playing with Infinity", 1957
- Peters, Thomas J. & Waterman, Robert H., Jr. "In Search of Excellence", 1982
- Phillips, T.R. (editor) "Roots of Strategy", 1940/1985
- Piaget, Jean "Structuralism", 1971
- Pike, Douglas "PAVN: Peoples Army of Vietnam", 1986
- Pincher, Chapman "Their Trade is Treachery", 1982
- Polanyi, Michael "The Tacit Dimension", 1966
- Polanyi, Michael "Knowing and Being", 1969
- Polkinghorne, J.C. "The Quantum World", 1984
- Pomeroy, William J. (editor) "Guerrilla Warfare and Marxism", 1968
- Powers, Thomas "The Man Who Kept the Secrets", 1979
- Prigogine, Ilya & Stengers, Isabelle "Order Out of Chaos", 1984
- Pustay, John S. "Counterinsurgency Warfare", 1965
- Rae, Alastair I.M. "Quantum Physics: illusion or reality", 1986
- Reid, T.R. "Birth of a New Idea" (Washington Post Outlook), 25 July 1982
- Rejai, M. "Mao Tse-Tung On Revolution and War", 1976
- Restak, Richard M. "The Brain: The Last Frontier", 1980
- Rifkin, Jeremy (with Ted Howard) "Entropy - A New World View", 1980
- Rommel, Erwin "Infantry Attacks" (translated by G.E. Kidde, 1944), 1937
- Rosen, Ismond "Genesis", 1974
- Ross, Steven "Rethinking Thinking" (Modern Maturity), Feb-Mar 1990
- Rothenberg, Gunther E. "The Art of Warfare in the Age of Napoleon", 1978
- Rowan, Roy "The Intuitive Manager", 1986
- Rucker, Rudy "Infinity and the Mind", 1982
- Rucker, Rudy "Mind Tools", 1987

- Rushbrooke, George Stanley "Statistical Mechanics" (EB), 1972
- Russell, Francis "The Secret War" (Time-Life Books), 1981
- Satter, David "Soviet Threat is One of Ideas More Than Arms" (Wall Street Journal), 23 May 1983
- Savkin, V. YE. "The Basic Principles of Operational Art and Tactics" (A Soviet View), 1972
- Sella, Amnon "Barbarossa: Surprise Attack and Communication" (Journal of Contemporary History), 1978
- Senger und Etterlin, Frido von "Neither Fear Nor Hope", 1963
- Shanker, S. G. (editor) "Godel's Theorem in Focus", 1988
- Shannon, Claude E. "Information Theory" (EB), 1972
- Sidey, Hugh "Playing an Assassin Like a Fish" (Washington Star), 14 June 1981
- Sidorenko, A.A. "The Offensive" (A Soviet View), 1970
- Singh, Baljitt & Mei, Ko-Wang "Modern Guerrilla Warfare", 1971
- Singh, Jagjit "Great Ideas of Modern Mathematics: Their Nature and Use", 1959
- Skinner, B.F. "Beyond Freedom and Dignity", 1972
- Sprey, P.M. "Taped Conversation with General Hermann Balck" (for Battelle), 12 January and 13 April 1979
- Sprey, P.M. "Taped Conversation with Lt. General Heinz Gaedcke", (for Battelle), 12 April 1979
- Stevenson, William "A Man Called Intrepid", 1976
- Stewart, Ian "Does God Play Dice", 1989
- Strausz-Hupe, R.; Kintner, W. R.; Dougherty, J. E.; Cottrell, A. J. "Protracted Conflict", 1959/1963
- Summers, Harry G. Jr. "On Strategy: The Vietnam War in Context", 1981
- Sun Tzu "The Art of War" (translated by S.B. Griffith, 1971), about 400 B.C.
- Sun Tzu "The Art of War" (edited by James Clavell, 1983), about 500 B.C.
- Sun Tzu "The Art of War" (translated by Thomas Cleary, 1988), about 400 B.C.
- Taber, Robert "The War of the Flea", 1965
- Tang Zi-Chang "Principles of Conflict" (Recompilation of Sun Zi's Art of War), 1969
- Tao Hanzhang "Sun Tzu's Art of War", 1987
- Thayer, Charles W. "Guerrilla", 1961
- Thompson, R.W. "D-Day", 1968
- Thompson, William Irwin "At the Edge of History", 1972
- Thompson, William Irwin "Evil and World Order", 1976
- Thompson, William Irwin "Darkness and Scattered Light", 1978
- Toffler, Alvin "Future Shock", 1970
- Van Creveld, Martin "Supplying War", 1977

- Van Creveld, Martin "Fighting Power: German Military Performance, 1914-1945", December 1980
- Van Creveld, Martin "Command", 1982
- Vigor, P.H. "Soviet Blitzkrieg Theory" (A British View), 1983
- Vo Nguyen Giap "Peoples War Peoples Army", 1962
- Vo Nguyen Giap "How We Won the War", 1976
- Waismann, Friedrich "Introduction to Mathematical Thinking", 1959
- Wallace, Mike "Inside Yesterday: Target USA" (for CBS News), 21 August 1979
- Watts, Alan "The Book", 1972
- Watts, Alan "Tao: The Watercourse Way", 1975
- Wernick, Robert "Blitzkrieg" (Time-Life Books), 1976
- Whiting, Charles "Patton", 1970
- Wilczek, Frank & Devine, Betsy "Longing for the Harmonies", 1988
- Wilson, Edward O. "On Human Nature", 1978
- Wing, R.L. "The Art of Strategy", 1988
- Winterbotham, F.W. "The Ultra Secret", 1975
- Wintringham, Tom "The Story of Weapons and Tactics", 1943
- Wolf, Eric R. "Peasant Wars of the Twentieth Century", 1969
- Wolf, Fred Alan "Taking the Quantum Leap", 1981
- Wylie, J.C. "Military Strategy", 1967
- Wynne, G.C. "If Germany Attacks", 1940
- Yukawa, Hideki "Creativity and Intuition", 1973
- Zukav, Gary "The Dancing Wu Li Masters", 1979

SOURCES BY INSTITUTION

- BDM "Generals Balck and Von Mellenthin on Tactics: Implications for Military Doctrine", 19 December 1980
- German Army Regulation 100/100 "Command and Control in Battle", September 1973
- German Army Regulation 100/200 "Army Command and Control System", August 1972
- National Defense University "The Art and Practice of Military Strategy", 1984
- ORD/CIA, "Deception Maxims: Fact and Folklore", April 1980
- U.S. Army FM 100-5 "Operations", July 1976
- U.S. Army FM 100-5 "Operations", 20 August 1982
- U.S. Army FM 100-5 "Operations", 5 May 1986
- U.S. Army Pamphlet 20-233 "German Defense Tactics Against Russian Breakthroughs", October 1951
- U.S. Army Pamphlet 20-269 "Small Unit Actions During the German Campaign in Russia", July 1953
- Westinghouse "I Am the Punishment of God" (Westinghouse Integrated Logistic Support #5)
- West Point Department of Military Art and Engineering, "Jomini, Clausewitz and Schlieffen", 1954
- West Point Department of Military Art and Engineering, "Summaries of Selected Military Campaigns", 1956

319

REVELATION

321

METAPHORICAL MESSAGE

- A loser is someone (individual or group) who cannot build snowmobiles when facing uncertainty and unpredictable change;

whereas

- A winner is someone (individual or group) who can build snowmobiles, and employ them in appropriate fashion, when facing uncertainty and unpredictable change.