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WKU Honors Program

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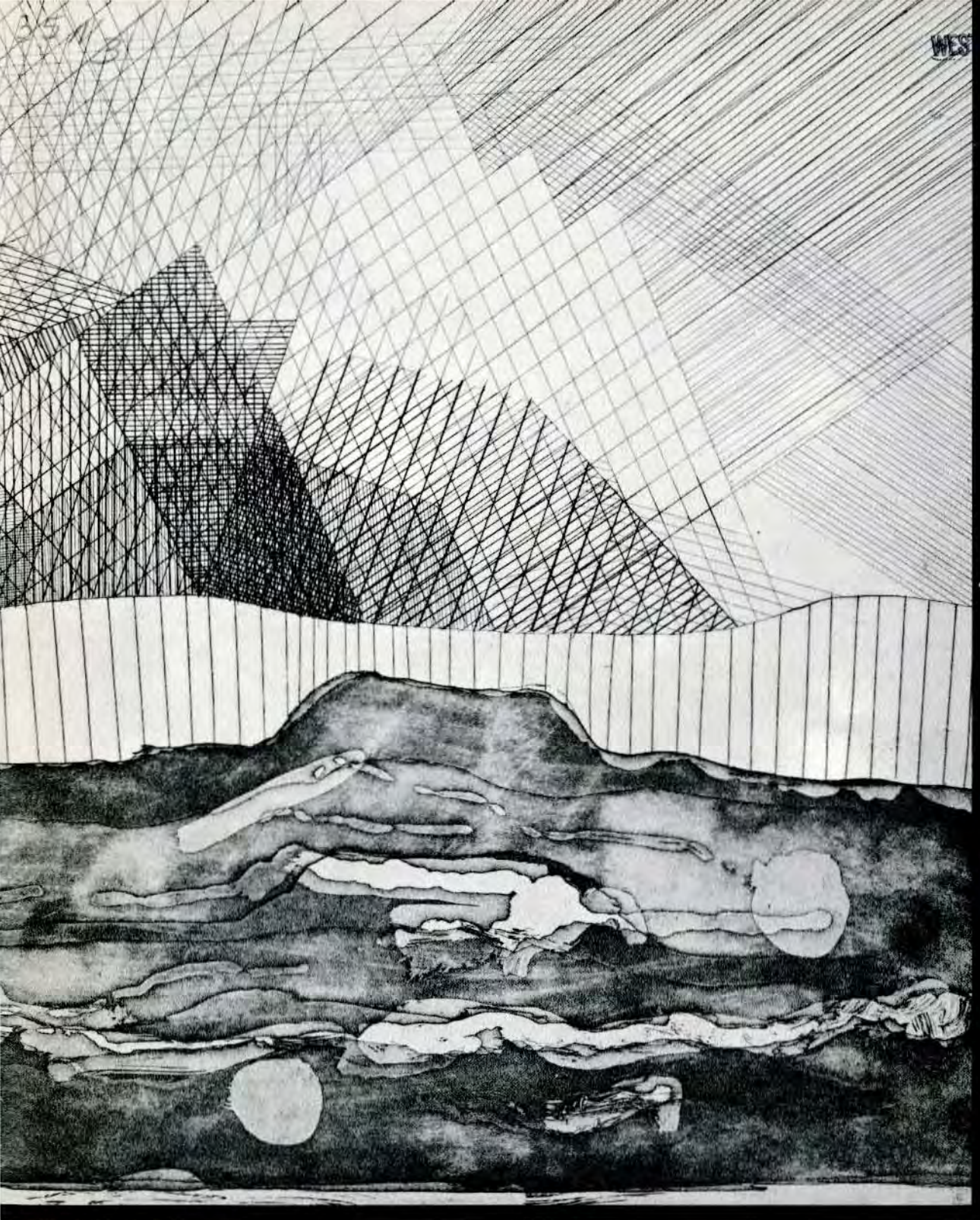
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**WESTERN KENTUCKY UNIVERSITY  
STUDENT HONORS BULLETIN**

**1975**

STUDENT HONORS  
RESEARCH BULLETIN

WESTERN KENTUCKY UNIVERSITY

Volume IV - 1976

This publication is dedicated to scholarly involvement and student research sponsored by the University Honors Committee. These papers are representative of work done by students from throughout the University.

University Honors Committee

James Baker  
Phil Constans  
Paul Corts  
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Jimmie Price  
Carla Sanders  
Myra Trask

This is the third in our series of student honors publications. Our continuing hope is that it, like the ones before it, will reward Western students doing scholarly research and writing and inspire others to follow. It represents only a small percentage of student academic work and is not to be a definitive guide to the amount or variety of scholarly work done on the campus; but we hope it fairly represents the depth and scope of student interest in finding information and meaning beyond the limits of the usual classroom experience.

The articles, all papers done for classes in the university honors program, are divided into three groups. The first group deals with science, especially the area of health care, one of the more practical applications of science in the modern age. The last group deals with the humanities, literature and religion, two of the more popular fields of the humanities today. Between them are three papers done for honor courses in which the major purpose was to expose the student to new areas of consciousness and have them respond orally and verbally to what they read. These articles are therefore personal and creative more than scientific or analytical, but they are no less a part of the total intellectual search we are trying to expose and encourage.

We hope this bulletin will inspire more students to write such papers and more professors to nominate them for future issues.

James Baker  
Advisor to the University  
Honors Program

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## STIMULANTS AND HUMAN BEHAVIOR

by  
Judy Hardin

Actions of stimulants on the central nervous system are based on the amine theory of mood.

The amount of availability of three hormones in the brain is related to the mood of an individual. The three hormones include serotonin (which accounts for synaptic transmission in some areas of the nervous system), norepinephrine (an activator of the sympathetic nervous system), and depamine (a nervous system activator that is changed by the body into norepinephrene). These three hormones are controlled by an enzyme, oxidase, that activates and destroys them.

The theory contends that the higher the availability for neural transmission, the happier, more alert, and more energetic a person will be.

Stimulants inhibit the acetylcholine and exert a stimulating effect on the parasympathetic division of the autonomic nervous system, relaxing muscles of the body and decreasing anxiety and stress.<sup>1</sup>

Chemically, amphetamines release norepinephrine from storage sites in the brain. They produce stimulating effects by flooding brain synaptic sites with amines, thus increasing the attention span.<sup>2</sup>

The first stimulant that I will discuss is tobacco. It contains many harmful substances. In this paper I will discuss the three most famous ones. Nicotine is a naturally occurring liquid alkaloid that is colorless and volatile.<sup>3</sup> On oxidation it turns brown and smells much like burning tobacco.

From one to three grams of nicotine is found in the smoke of one average cigarette; as much as ninety percent of this nicotine may be absorbed by the smoker's body. Nicotine is a stimulant and the chief effects of it are on the heart, blood vessels, digestive tract and kidneys. It raises the smoker's blood pressure and speeds up his pulse. Nicotine stimulates the flow of saliva and the general action of the digestive system but later these bodily functions are depressed.<sup>4</sup> The duration of action of tobacco in one cigarette lasts about an hour.

In acute poisoning, nicotine causes tremors that develop into convulsions, frequently terminated by death. The cause of death is suffocation resulting from paralysis of the muscles used in respira-

tion. This paralysis stems from the blocking effect of nicotine on the cholinergic system that normally activates the muscles.<sup>6</sup>

Another harmful substance found in cigarette smoke is tar. It is a thick brown or black viscous liquid which may be obtained by distillation of wood, coal, or tobacco. When we inhale smoke, a sizeable portion of tar is retained, temporarily in our bodies. We eliminate many noxious substances through bowel movements, urination, perspiration, and respiration.<sup>7</sup>

In addition to nicotine and tar, carbon monoxide is found in cigarette smoke. It combines with hemoglobin in the blood so that it can no longer carry oxygen efficiently. This effect of smoking probably causes "shortness of breath."<sup>8</sup>

If no more than the first half of a cigarette is smoked at a normal rate, the heat of the smoke will not exceed body temperature. On the contrary, in the remaining portion of a cigarette, the heat of the smoke may rise to as much as one hundred forty degrees Fahrenheit. If a cigarette is smoked to the filter, one may be inhaling smoke as hot as one hundred ninety degrees Fahrenheit!<sup>9</sup>

There are many adverse side effects resulting from smoking cigarettes. Tobacco smoke stimulates the flow of mucus in the respiratory tract, but it delays removal of the mucus by retarding the action of the bronchial tubes.<sup>10</sup>

Women are more sensitive to nicotine than men. The blood volume of women changes thirty-three percent while smoking one cigarette. Men's blood volume only changes nineteen percent. This is the factor which causes women to get a bigger stimulation than men smokers.

A German study of more than five thousand women indicates that there is a greater incidence of frigidity, menstrual disturbances, and miscarriages among women smokers than among nonsmokers. These same women experienced a greater death rate for their babies in the first three years of their babies' lives.

Cigarette smoking during pregnancy subtracts from the average birth weight of offspring. Premature babies are born more often to smokers than to nonsmokers. Premature menopause occurs in twenty percent of smokers, but only to two percent of nonsmokers.

Age too, seems to make a difference. Many people over thirty-five, both men and women, show no change in blood volume. This may occur because the surface blood cells of older individuals are less sensitive, due to a long history of excessive smoking.<sup>11</sup>

The mortality rate of people who use tobacco is thirty-two percent greater than for people who do not smoke. The mortality rate of people who smoke only cigarettes is fifty-two percent greater than the rate for people who smoke only cigars or pipes is not appreciable higher than

that of nonsmokers.<sup>12</sup>

Regular cigarette smokers are subject to an increased risk of dying from lung cancer, cardiovascular diseases, bronchitis, pleurisy, emphysema, ulcers of the stomach and duodenum, oral, bladder larynx, and esophagus cancer, and cirrhosis of the liver. The death rate from coronary heart diseases among regular cigarette smokers only is sixty-three percent higher than the rate for nonsmokers. For further information, see part four of the appendix.

Smoking cigarettes quickly becomes a habit. A habitual smoker smokes at a specific time on most days; he smokes after meals, snacks, drinks, and on various other occasions. He soon finds that he is uncomfortable if he does not have a cigarette when he is unconsciously scheduled to smoke one. Although smoking was at first perhaps accompanied by coughing, nausea and dizziness, these symptoms usually quickly disappear and instead, one experiences unpleasant symptoms when one does not smoke.<sup>13</sup>

One theory suggesting reasons for smoking asserts that there is an oral need for stimulation. Many studies indicate that smokers have additional habits such as greater alcohol and coffee intake, and in their early lives they showed more thumbsucking. Congruent with this idea is the finding that the longer people were breast-fed the less they smoke and the easier it is for them to stop.<sup>14</sup>

On the other hand, tobacco increases secretion of epinephrine, which mediates both stress and arousal responses. It lowers skin temperature and increases hand steadiness and the attention span.<sup>15</sup>

Caffeine is also a stimulant. It is not very toxic, but high doses can result in convulsions, while still higher doses may cause death from respiratory failure.

One death in man has been reported, following the injection of 3.2 grams; the oral dose that would be fatal has been estimated at about ten grams.

At dose levels (about one hundred fifty milligrams of caffeine, or about two cups of coffee) the cortex is activated and the electroencephalogram shows an arousal level. There is a good relationship between the amount of caffeine consumed and the effects on the autonomic nervous system. About five hundred milligrams of caffeine, or about four cups of coffee, produces sensory disturbances, such as ringing in the ears and flashes of light.<sup>16</sup> Incidentally, the effects of caffeine continue for about two or three hours after consumption.<sup>17</sup>

An excess of coffee can easily have toxic effects, such as a rapid pulse, nervousness, irritability, and insomnia. In some individuals, too much coffee may even bring on attacks of dizziness and faintness, or palpitation from an overaccelerated heart rate and force. The amount of coffee which is harmful is undetermined. For some individuals, a few cups a day is excessive.<sup>18</sup>



After drinking coffee and retiring, small body movements increase and rectal temperature is elevated. Higher rectal temperature lessens the amount of time spent in the deepest stage of sleep, but it does not greatly affect dream time.<sup>19</sup>

Adverse side effects are often reported after oral ingestion of as little as one gram of caffeine (seven to ten cups of coffee). These include insomnia and restlessness, sensory disturbances, such as ringing in the ears and flashes of light, muscle tenseness and tremor, cardiac irregularities, exacerbation of the symptoms of a peptic ulcer, and diarrhea.<sup>20</sup> However, the central stimulation and toxic effects can be blocked by central nervous system depressants.<sup>21</sup>

Tolerance develops to some of the effects of caffeine, but not to the central stimulation. Withdrawal is often accompanied by headache.<sup>22</sup>

A cup of coffee after dinner may have a positive effect on the digestion, since it increases the gastric juice.<sup>23</sup> Caffeine increases the flow of urine and thus helps cleanse the body of metabolic end-products. This action has made caffeine valuable in cases of edema or dropsy, conditions in which fluid accumulates excessively in the tissues. In these cases, it is vital to increase the heart rate, so that more blood is pumped into the blood vessels,, thus promoting greater flow into the kidneys with the elimination of fluid.<sup>24</sup>

Caffeine alleviates some types of headache pain by constricting cerebral arterioles.<sup>25</sup> It is an antifatigue agent and increases endurance and motor activity. It makes thought processes clearer<sup>26</sup> and increases the attention span.

Incidentally, tests made in 1975 by the American Medical Association established that a cup of regular ground coffee contains almost twice as much caffeine as a cup of instant coffee, and a cup of regular decaffeinated coffee has about one-third the amount of caffeine as a cup of regular ground coffee.<sup>27</sup>

In addition to tobacco and caffeine, amphetamines are stimulants. They shift the electroencephalogram to a higher frequency. Incidentally, amphetamines increase hand steadiness while caffeine decreases it. At low dose levels, amphetamines produce fewer side effects than caffeine.<sup>28</sup>

The injection of stimulants sometimes produces whole-body orgasms, a pleasure that might be the major attraction of them.<sup>29</sup>

In general, the reactions that amphetamines produce are signs of sympathetic nervous system stimulation, for example, an increase of bodily activity and an arousal and elevation of mood. Arousal and elevation of mood increases confidence, euphoria, fearlessness, talkativeness, impulsiveness, loss of appetite, and a decrease in fatigue.<sup>30</sup> Amphetamines also increase blood pressure, causing heart palpitations and cardiac pain.<sup>31</sup> Later, when sleep comes, dream time is reduced and bodily movements increase. Less time is spent in the deepest

stage of sleep.<sup>32</sup>

After the abuser awakens, he is depressed. Dr. Richard Miller, a psychology instructor at Western Kentucky University, asserts that this depression is explained by a norepinephrine-deficient state, in which the brain experiences following the abuse of amphetamines.

A symptom characteristic of a chronic amphetamine abuser is examining, picking, or probing various parts of the body, hand clasping, and hand examining. Similar eye-hand coordinated movements are involved in examining both external movements, as well as in self-grooming. The abnormal feature of this grooming response is in the abuser's continuous repetitious nature. Some amphetamine abusers have been observed rubbing and picking blemishes or scars. They often develop delusions of parasites and they believe that they have parasites incysted under the skin. They may believe that small mites or lice have dug into the surface of the skin. Often, the individual will not only attempt to dig these parasites out with his fingernails, but he may use knives, needles, or other sharp instruments to extract these imaginative parasites.<sup>33</sup>

Long term effect of amphetamines include weight loss, skin sores, infections from neglected health care, aggression and anti-social behavior, changes in mood and behavior, which may develop into a psychosis. This disorder is often characterized by extreme activity for long periods of time, feelings of superiority, bizarre forms of suspiciousness, hallucinations, and excitement, all to an exaggerated degree.<sup>35</sup>

An amphetamine psychotic looks from side to side, in an attempt to see who is beside and behind him, without the person following him, realizing that he is looking. Some individuals have spent many hours spying on people from hidden positions.<sup>36</sup>

Amphetamine psychosis is a paranoid reaction, resembling schizophrenia. The user is convinced that others are out to persecute him. The amphetamine psychotic lacks control over his emotions, and loses contact with reality.<sup>37</sup>

The influence of amphetamines on sexual behavior is largely dependent upon setting, mood, and predisposing personality. Use of these drugs over a short period of time, however, appears to induce no change in sexual performance, although some increase in the enjoyment of the sexual act (accompanying the delay of orgasm) has been reported.

In 1969, August and Gershon found that continued high level amphetamine abuse produces increased promiscuity, compulsive masturbation, prostitution, and intensification of sado-masochistic fantasies.<sup>38</sup>

People who use large doses of amphetamines often grind their teeth, which causes ulcers of the lip and tongue.

In addition, during high dose usage there is generally insufficient sleep and inadequate diet which contribute to circulatory collapse.<sup>39</sup> However, only rarely, does even high-dose intravenous use of amphetamines result in lethal rupture of blood vessels as a result of drug induced increases in arterial pressure.<sup>40</sup>

Amphetamines have a unique withdrawal, and it is the worst part of a "speed run." They are often classified as addictive, even though they do not produce the classic withdrawal, as for example, barbiturates. They do, however, produce a strong tolerance and a strong psychological dependence in the individual. The withdrawal seems to be caused by a lack of norepinephrine and accumulated fatigue. A habitue who suddenly discontinues using amphetamines, usually goes through a prolonged period of lethargy, deep psychological depression, nightmares, episodes of restlessness, and a long exhausted sleep. Often, a heavy abuser stops his injections and slips between periods of sleep and coma for days; then, when his tolerance to the drug has diminished, he awakens and starts his injections again.<sup>41</sup>

Amphetamines increase aspects of sensory acuity. With some doses, they enhance reality rather than offer an escape from it.<sup>42</sup> An example of their usefulness is in the treatment of hyperkinetic children. These children are hyperactive, easily distracted, impulsive, and uncoordinated. Amphetamines are effective in relaxing them without causing them to lose interest in their surroundings.<sup>43</sup>

Another example of the usefulness of amphetamines is in the treatment of narcolepsy. The patients do not develop a tolerance to them.

In addition, neuresis has been treated with amphetamines, when its cause is deep sleep and consequent inability to attend to sensations of pressure from the bladder. They lessen the depth of sleep and consequently enable arousal.<sup>44</sup>

Atropine and scopolamine "belladonna" stimulate from the cortex to the reticular activating system, to the medulla. They cause an individual to become restless, wakeful, and talkative. If the dosage is high, or if someone continues to take doses, the stimulation can continue into delirium, coma, and death from respiratory failure. Some cases of amnesia have been caused by atropine and scopolamine.<sup>45</sup>

Antidepressants are used to combat depression. Some may be more effective against depressions which originate in (and can be traced to) well defined events: others may work better against endogenous depressions. They have also been called psychic energizers and thymoleptics. Examples of antidepressants include various monoamine oxidase inhibitors, imipramine, and methylphenidate.<sup>46</sup>

Imipramine is probably the drug of choice against depression. It facilitates adrenergic functioning, and the rationale for using it to fight depression is because depression has characteristics of exhaustion.<sup>47</sup>

Imipramine is most effective in a patient for whom the onset of depression has not been caused by obvious external causes, and whose pre-marked personality is non-neurotic. On the other hand, it is not likely to help a patient with a pattern of depression characterized by anxiety, tension, and insomnia.<sup>48</sup> There is often a period of rebound depression following a period of administration.<sup>49</sup> There are several good aspects of using imipramine to combat depression. For example, it does not produce euphoria in a normal individual, but it does elevate the mood of a depressed patient. Another good aspect of imipramine is that it does not induce tolerance or a psychological dependence.

On the other hand, imipramine produces several side effects. Due to the irreversible inactivation in the metabolism of epinephrine, norepinephrine, dopamine, and serotonin, postural hypotension, headache, weakness, and fatigue may occur.<sup>50</sup> In addition, imipramine may produce dry mouth and constipation.<sup>51</sup> Furthermore, it may cause glaucoma in a susceptible individual.

Methylphenedate is sometimes used to reduce fatigue. It has powerful anorexic appetite suppressing effects, and so is usually prescribed to an obese individual.<sup>52</sup>

Another member of the stimulant family is cocaine. It is derived from the plant *Erythroxylon coca* and is widely used in the highlands of Columbia, Peru, Bolivia, and northwestern Argentina.<sup>53</sup>

It is absorbed ten to fifteen minutes after ingestion, and the patient is stimulated.<sup>54</sup> In fact, large doses stimulate every part of the brain.<sup>55</sup> Cocaine potentiates pain and the effects of the sympathetic nerve stimulation and of injected epinephrine and norepinephrine.<sup>56</sup>

Immediately after absorption of cocaine, the conversation of the individual is glib and inconsequential.<sup>57</sup> His personality is inflated and he feels great muscular and mental strength. He feels that he can accomplish whatever he desires to do. In fact, cocaine increases sexual excitement but diminishes performance.

In addition, an individual who has taken cocaine has auditory and visual hallucinations. Smell, sight, and hearing are impaired. The abuser believes that he is being threatened, and that his thoughts are being secretly read. Also he may feel that he is being spied on through holes in the ceiling.

Furthermore, visual hallucinations are unrelated to occupation or education; black spots are often seen on a light background and mistaken for insects.<sup>58</sup> He often suffers Magnan's sign, a condition characterized by a feeling that multiple worms or insects are creeping under the skin. Some individuals compare it to fine sand under their skin,<sup>59</sup> while others interpret it as injury by electrical shock.<sup>60</sup>

After absorption, cocaine affects principally the circulation,

the respiration, the brain, and the eye.<sup>61</sup> It makes the heart beat stronger and faster. Cocaine contracts the blood vessels and raises the blood pressure. Large doses stimulate the vasoconstrictor center and the cardio-accelerator centers which accounts for this effect on the blood vessels and heart. On the contrary, poisonous doses slow down the heart action. In addition, cocaine increases the body temperature, because it increases muscular activity and it constricts blood vessels.

Equally important, cocaine makes breathing faster and deeper. However, large doses slow down respiration.<sup>62</sup>

Cocaine has a bitter taste, however, for a short time because it soon paralyzes the nerve endings in the tongue which appreciate bitter substances. It also lessens pain on the mucous membrane and contracts its blood vessels.

If cocaine is sniffed, it lessens the sense of smell by paralyzing the nerve endings which receive impressions of smell.<sup>63</sup>

Treatment for an overdose:

- 1) Reassure the patient that his condition is not serious.
- 2) Keep him flat on his back.
- 3) Apply an ice bag to his head.
- 4) For the excitement, sodium barbitol is given intravenously, or large doses of paraldehyde should be given by his rectum.
- 5) The collapse is treated with stimulants, such as epinephrine, caffeine, strychnine, camphor, amyl nitrite, or nitroglycerin.
- 6) Give him artificial respiration.
- 7) Convulsions are treated with inhalations of ether.<sup>64</sup>

Cocaine is not physically addictive. However, tolerance develops and the habitue can become psychologically dependent upon the drug. In early stages of dependence, a cocaine habitue is excitable, restless, and irritable. He suffers pain in the limbs, tremors, choreiform movements, and insomnia.<sup>65</sup> As more of the effects leave, he becomes suspicious and morose, he often has delusions of infidelity. He has auditory, visual, and tactile hallucinations.<sup>66</sup> He often suffers Magnan's sign. Later, he may become quarrelsome and neglect his health and hygiene.

A cocaine habitue rapidly changes from exhilaration and untiring activity to restlessness, dullness, and depression. Judgment and ethical sense are deteriorated and he may become aimless, loquacious, and obscene. He seeks solitude and is prone to turn his fancied injuries into resentful action.

Acute insanity may develop rapidly and run its course within a few weeks.<sup>68</sup> It results in delirium or insanity. All his hallucinations and delusions are exaggerated, and he may become violent.<sup>69</sup> He eventually loses will-power, self-control, and motivation. In addition, he suffers from digestive disturbances, foul breath, a drooling of saliva, and constipation. He is pale, emaciated, and lacks muscular control.

The cocaine habit is best treated by rapidly withdrawing the drug and substituting atropine or hyoscine.<sup>70</sup> On the contrary, some professionals administer strychnine and digitalis every four hours.

For the first forty-eight hours of treatment the individual sleeps almost continuously. Active delirium may suddenly develop after the patient awakens. After the delirium, the habitue usually says that he has slept quietly and has had an excellent night. No recollection of the delirium remains.

After the acute symptoms of addiction have passed, it is essential to build up the patient and to solve the problems which impelled him to take the drug.

Recurrence of the cocaine habit occurs more often than that of any other drug. This is on account of the vivid remembrance of the sense of power and success.<sup>71</sup>

There are many medical purposes attributed to cocaine. If it is injected into a mucous membrane, it reduces pain, makes the membrane pale, and reduces swelling. It also controls bleeding by contracting the blood vessels. Incidentally, if it is put on an open wound, it relieves pain.

When used as an eye drop, it acts as a local anesthetic so that eye operations may be performed, and it constricts the blood vessels. It also rapidly dilates the pupil, usually in a few minutes. It does not affect the capacity to focus for near or distant objects. The effect is caused by stimulation of the nerve endings of the radial muscles of the iris.

In addition, cocaine often lessens vomiting and hiccoughs by paralyzing the nerve endings in the stomach, so that impulses which cause vomiting or hiccoughs are checked.<sup>72</sup>

On May 3, 1972, the New York State Assembly passed a bill establishing controls over the manufacture and distribution of amphetamines, barbiturates, and narcotics. This bill requires the doctor to issue three prescription sheets each time he prescribes a drug. He retains a copy and sends one to the state for availability to check on abusers. The pharmacist also keeps a copy of the prescription sheet.<sup>73</sup>

In the future, there will probably be more drugs and more intense addictions. People must become aware of this fact and contribute to the research of drugs and to the development of new machines

and techniques that will reverse the actions of these drugs on the mind and body. They must also become aware of the serious problems these individuals possess, and they must treat them as individuals, instead of as criminals.

APPENDIX

Frequency and Percentage of Drug Use Reported by an Experimenter

Drug	Nonusers		Occasional		Regular	
	#	%	#	%	#	%
Tobacco	368	61	144	22.9	101	16.1
Amphetamines	523	83.3	63	10	42	6.7

Differences Between Sexes

Cigarettes per Day	1-9	10-19	20-39	40+
Men	10.7%	9.8%	22.7%	6.3%
Women	18.8%	16%	21.3%	1.3%

Differences Between Ages

Age	Present Smokers
17-24	33.9%
25-34	43.5%
35-44	37.4%
45-64	29.9%
65+	9.5%

Expected and Observed Deaths for Smokers of Cigarettes Only and Mortality Ratios in Seven Prospective Studies

<u>Underlying Cause of Death</u>	<u>Expected Deaths</u>	<u>Observed Deaths</u>	<u>Mortality Rate</u>
Cancer of Lung	170.3	1,833	10.8
Bronchitis and Emphysema	89.5	546	6.1
Cancer of Larynx	14.0	75	5.4
Oral Cancer	37.0	152	4.1
Cancer of Esophagus	33.7	113	3.4
Stomach and Duodenal Ulcers	105.1	294	2.8
Other Circulatory Diseases	254.0	649	2.6
Cirrhosis of Liver	169.2	379	2.2



(CHART CONT.)

<u>Underlying Cause of Death</u>	<u>Expected Deaths</u>	<u>Observed Deaths</u>	<u>Mortality Rate</u>
Cancer of Bladder	111.6	216	1.9
Coronary Artery Disease	6,430.7	11,177	1.7
Other Heart Diseases	526	868	1.7
Hypertensive Heart	409.2	631	1071.5
General Arteriosclerosis	210.7	310	1.5
Cancer of Kidney	79	120	1.5
All Causes	15,653.9	23,223	1.68

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FOOTNOTES

<sup>1</sup>Kenneth Jones, Louis Shainberg, and Curtis O. Byer, Drugs and Alcohol, 2nd ed. (New York: Harper and Row Publishing Inc., 1969) pp. 68-72

<sup>2</sup>Ibid. p. 12.

<sup>3</sup>Oakley S. Ray, Ph.D., Drugs, Society, and Human Behavior (Saint Louis: C. V. Mosby Co., 1972) p. 103.

<sup>4</sup>Author Cain, M.D., Young People and Smoking (New York: John Day Co., 1964) p. 17

<sup>5</sup>Fred Leavitt, Drugs and Behavior (Philadelphia: W. B. Saunders Co., 1974) p. 46

<sup>6</sup>Ray, Drugs, Society, and Human Behavior, p. 105.

<sup>7</sup>Cain, Young People and Smoking, p. 19.

<sup>8</sup>Ray, Drugs, Society, and Human Behavior, p. 103.

<sup>9</sup>Cain, Young People and Smoking, p. 20.

<sup>10</sup>Ibid. p. 18.

<sup>11</sup>Alton Ochsner, Smoking: your choice between life and death (New York: Simm and Schuster, 1971) p. 129.

<sup>12</sup>Cain, Young People and Smoking, p. 129.

<sup>13</sup>Ibid. p. 25.

<sup>14</sup>Ray, Drugs, Society, and Human Behavior, p. 104.

<sup>15</sup>Leavitt, Drugs and Behavior, p. 46.

<sup>16</sup>Ray, Drugs, Society, and Human Behavior, p. 116.

<sup>17</sup>Leavitt, Drugs and Behavior, p. 46.

<sup>18</sup>Medical and Health Encyclopedia, Morris Fishbein, M.D., (New York: Stuttman Co. Inc., 1970) p. 420

<sup>19</sup>Jones, Shainberg, and Byer, Drugs and Alcohol, p. 352.

<sup>20</sup>Leavitt, Drugs and Behavior, p. 79.

<sup>21</sup>Ray, Drugs, Society, and Human Behavior, p. 115

- <sup>22</sup>Leavitt, Drugs and Behavior, p. 79.
- <sup>23</sup>Medical and Health Encyclopedia, p. 420.
- <sup>24</sup>Ibid. p. 419.
- <sup>25</sup>Leavitt, Drugs and Behavior, p. 354.
- <sup>26</sup>Ibid. p. 46.
- <sup>27</sup>Medical and Health Encyclopedia, p. 420.
- <sup>28</sup>Leavitt, Drugs and Behavior, p. 353.
- <sup>29</sup>Robert M. Julian, A Primer of Drug Action (W. H. Freeman and Co., 1975) p. 87
- <sup>30</sup>Jones, Shainberg, and Byer, Drugs and Alcohol, pp. 73-74.
- <sup>31</sup>Julian, A Primer of Drug Action, p. 88.
- <sup>32</sup>Leavitt, Drugs and Behavior, p. 353.
- <sup>33</sup>Drug Abuse: Current Concepts and Research ed. Wolfram Keup, M.D. (Springfield: Charles C. Thomas, 1972) pp. 302-306.
- <sup>34</sup>Julian, A Primer of Drug Abuse, p. 88.
- <sup>35</sup>Jones, Shainberg, and Byer, Drugs and Alcohol, p. 74.
- <sup>36</sup>Drug Abuse: Current Concepts and Research, pp. 302-303.
- <sup>37</sup>David C. Lewis, M.D., Stimulants: Amphetamines, Caffeine, and Cocaine (Boston: CSCS Inc., 1970) pp. 5-6.
- <sup>38</sup>Drug Use in America 2nd ed. Commission on Marijuana and Drug Abuse (Washington, D.C.: U.S. Government Printing Office, 1973) p. 160.
- <sup>39</sup>Leavitt, Drugs and Behavior, p. 84
- <sup>40</sup>Julian, A Primer of Drug Action, p. 89.
- <sup>41</sup>Jones, Shainberg, and Byer, Drugs and Alcohol, pp. 74-75.
- <sup>42</sup>Leavitt, Drugs and Behavior, p. 86.
- <sup>43</sup>Ibid. p. 159.
- <sup>44</sup>Ibid. p. 353.
- <sup>45</sup>Jones, Shainberg, and Byer, Drugs and Alcohol, pp. 69-72.
- <sup>46</sup>Leavitt, Drugs and Behavior, p. 3.

<sup>47</sup>Ibid. p. 151.

<sup>48</sup>Ibid. p. 152.

<sup>49</sup>Ibid. p. 152.

<sup>50</sup>Ibid. p. 151.

<sup>51</sup>Drug Use in America: Problem in Perspective 2nd ed. Commission on Marijuana and Drug Abuse (Washington, D.C.: U.S. Government Printing Office, 1973) P. 148.

<sup>52</sup>Leavitt, Drugs and Behavior, p. 353.

<sup>53</sup>Ibid. p. 44.

<sup>54</sup>A. S. Blumgarten, M.D., Textbook of Materia Medica, Pharmacology and Therapeutics 7th ed. (New York: Macmillan Co., 1945) p. 41

<sup>55</sup>Ibid. p. 543

<sup>56</sup>Leavitt, Drugs and Behavior, p. 44.

<sup>57</sup>Jonathan Meakins, M.D., L.L.D., Practice of Medicine 3rd ed. (St. Louis: C. V. Mosby Co., 1940) p. 1362.

<sup>58</sup>Textbook of Medicine 2nd ed., ed. Russell L. Cecil (New York: publisher and date unknown) p. 552.

<sup>59</sup>An Index of Differential Diagnosis of Main Symptoms 5th ed., ed. Herbert French (Baltimore: William Wood and Co., 1936) p. 748.

<sup>60</sup>Textbook of Medicine, p. 552.

<sup>61</sup>Blumgarten, Textbook of Materia Medica, Pharmacology and Therapeutics, p. 542.

<sup>62</sup>Ibid. pp. 552-553.

<sup>63</sup>Ibid. p. 552.

<sup>64</sup>Ibid. p. 554.

<sup>65</sup>Meakins, Practice of Medicine, p. 1362.

<sup>66</sup>Textbook of Medicine, p. 552.

<sup>67</sup>Meakins, Practice of Medicine, p. 1362.

<sup>68</sup>Textbook of Medicine, p. 552.

<sup>69</sup>Meakins, Practice of Medicine, p. 1362.

<sup>70</sup>Blumgarten, Textbook of Materia Medica, Pharmacology and Therapeutics, p. 545.

<sup>71</sup>Textbook of Medicine, pp. 552-553.

<sup>72</sup>Blumgarten, Textbook of Materia Medica, Pharmacology and Therapeutics, p. 542.

<sup>73</sup>Journal of Drug Education Vol. 3. (Baywood Publishing Co., 1973) p. 20.

<sup>74</sup>Ibid. p. 5.

<sup>75</sup>Ochsner, Smoking: your choice between life and death, p. 125.

<sup>76</sup>Ibid. p. 124.

<sup>77</sup>Leavitt, Drugs and Behavior, p. 78.

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THE MECHANICS OF SLEEP  
by  
Marcus Musgrave

Sleep is necessary for all animals and man. Everyone requires a specific amount of sleep each day. However, sleep need varies from individual to individual.<sup>1</sup> Scientists have often wondered why man does need sleep. A sixth century Greek theorist believed that the need for sleep was caused by blood leaving the brain and entering into the arteries, leaving the brain "undernourished". Naturally, this belief is not held to be true today, however, blood circulation does have its effects on the brain.<sup>2</sup> Some of the more modern theories of sleep stem from the results of stress, nervous fatigue or exhaustion. Also, the need for sleep is thought to result from the accumulation of metabolic wastes.<sup>3</sup> Despite the number of years man has studied the aspects of sleep, he still does not know why man must sleep. However, through his studies, man has learned a great deal about the mechanics of sleep. Scientists have learned that there are two "states" of sleep which each individual passes through during the course of the night. These two "states" are often referred to as S-(synchronized) sleep and D-(desynchronized) sleep. They are also referred to as NREM (non rapid eye movement) sleep and REM (rapid eye movement) sleep.<sup>4</sup>

In addition to their knowledge of the mechanics of sleep, scientists have learned much about the sleep requirements of the human being.

Physiologists have learned a great deal about the mechanics of the sleep cycle by the use of the electroencephalogram (EEG). The EEG is a machine which will record electronic impulses from the brain and record them by means of small needles. Through studies of the EEG recordings, scientists have learned that brain waves follow certain characteristics during the course of the night and they have classified them into four distinct stages.<sup>5</sup>

As one begins to fall asleep, he first passes through a stage known as the "twilight phase". In this phase the sleeper is somewhat conscious but not completely asleep. His thoughts drift from the real world into a dreamlike status.<sup>6</sup> At this point his EEG reading is very irregular. When the sleeper begins to relax, his brain waves fall into a pattern known as alpha waves, having a rhythm of about 9 to 12 cycles per sec.<sup>7</sup> Alpha waves decrease as the individual becomes more and more relaxed. At this point, the subject is about to fall asleep. In other words, he is on the verge of wakefulness and unconsciousness.<sup>8</sup>

As the sleeper becomes unconscious, his body relaxes and he falls into stage-1, the lightest stage of sleep, characterized by a low

amplitude EEG reading, but changing very quickly. Usually, when the sleeper has reached stage-1, alpha waves have ceased. Also, during stage 1 sleep, heart rate slows and if left undisturbed the sleeper will descend into stage-2.<sup>9</sup>

The EEG reading of stage-2 sleep indicates rapid rises and falls resembling a wire spindle. Stage-2 sleep is characterized by slow side to side eye movement. At this point, the sleeper has been asleep for only about ten minutes and is able to be stimulated very easily. Undisturbed at this stage, the sleeper falls into a stage of deeper sleep, stage-3. The EEG readings of this phase are characterized by small waves interrupted by large waves having an amplitude about five times that of alpha waves. Again, body functions continue to slow down and awakening becomes more difficult.<sup>10</sup>

Finally the sleeper passes into stage-4 sleep, sometimes known as delta sleep. EEG recordings are characterized by large synchronous waves known as delta waves. Stage-4 sleep is a stage of deep sleep and awakening of the sleeper would require a few seconds.<sup>11</sup> One spends most of the first part of early sleep in stage-4 sleep, especially if he has been deprived of regular sleep.<sup>12</sup> Stage-4 usually ends about ninety minutes after the subject has fallen asleep. Then he begins to drift back into stage-3 and eventually he will return to stage-1 sleep. In this stage the sleeper is "far removed from the world".<sup>13</sup>

These stages of sleep, known as synchronized sleep, occur in cycles. The sleeper emerges from S-sleep about four or five times each night. These four or five emergences into stage-1 are not like the initial stage-1 sleep. These stages are completely different and considered to be another "state" of sleep, known as D-sleep.<sup>14</sup>

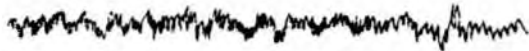
There are physiological differences between D-sleep and S-sleep. Measurements taken during S-sleep produce relatively low and steady pulse, respiration and blood pressure readings. However, D-sleep is characterized by somewhat faster and more irregular pulse, respiration and blood pressure.<sup>15</sup> Also, the muscular system in D-sleep, as compared to the relaxed state of S-sleep, is more tense.<sup>16</sup>

The mental activity that occurs during D-sleep has been studied in great detail.<sup>17</sup> During the first emergence into this stage, known as stage-1 REM, the EEG records rapid eye movements of the sleeper. When rapid eye movements occur, the sleeper is probably having a dream (about a 99% probability).<sup>18</sup> Usually, the first dream lasts only about ten minutes, often containing some aspect of the day that has just been completed.<sup>19</sup> Following the REM-1 phase, the subject descends back through the four stage into a deep sleep.

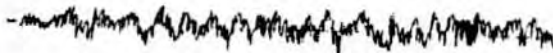
Conclusions of studies conducted by Doctors E. Aserinsky and N. Kleitman show that brain wave patterns during dream periods are similar to brain wave patterns during wakefulness. Some assert that REM-1 sleep is not sleep at all, rather, it is a complete state of consciousness.<sup>20</sup> Aserinsky and Kleitman suggested that REM's were associated with mental activity. They tested their hypothesis in an



I. EEG recording of the wakefulness state.



II. EEG recording of stage-1 sleep.



III. EEG recording of stage-2 sleep.



IV. EEG recording of stage-3 sleep.



V. EEG recording of stage-4 sleep.<sup>24A</sup>



experiment where patients were awakened before going into the REM phase.<sup>21</sup> Their conclusions were:

Twenty out of twenty-seven replies from individuals who were awakened after rapid eye movements had been observed yielded detailed dream descriptions in contrast to nineteen out of twenty-three replies from persons awakened in the absence of eye movements, which revealed a complete failure to recall dreaming...It is indeed that the rapid eye movements are directly associated with visual imagery in dreaming.<sup>22</sup>

Each time the dream cycle occurs, dreams will get longer and more vivid.<sup>23</sup>

Dreams have been studied with great interest, not for their biological significance, which is minimal, but for their mental aspects. Sigmund Freud suggested that dreams "acted as a safety valve... relieving tensions of the day, thus enabling one to sleep."<sup>24</sup> However, Wm. Dement suggested that dreams are not for maintaining sleep, but that one sleeps in order to dream. He tested his theory by depriving subjects of dreams by permitting them to sleep only in the other stages. This was made possible by observation of the EEG recordings. Subjects were awakened when their EEG pattern showed their emergence into the REM cycle. Upon their returning to sleep they would begin a new cycle. After a few nights of dream deprivation, the patients tried harder each night to enter directly into the dream phase after going to sleep. When the subjects were allowed to sleep normally, their dream cycle time increased.<sup>25</sup> Dement concluded that the subject needed dreams and thus accounted for lost dream time during the recovery period. He also found that the dream deprived subjects displayed anxiety and lessened concentration ability. However, his experiment does not tell the full story. Although dream time increased, S-sleep still occupied 77% of the sleep cycle. Other sleep deprivation studies reveal that, during the recovery time, patients spent more time in synchronized sleep than in D-sleep. For example, in an experiment conducted at the Walter Reed Hospital, where after recovery from a sixty hour period of wakefulness, subjects spent more time in stage-4 sleep and less time in dream sleep.<sup>26</sup> In another experiment conducted by Dement, patients were allowed only four hours of sleep each night. During their recovery period, stage-4 and dream time increased each night while stages 2 and 1 at sleep onset decreased.<sup>27</sup> From these experiments one might conclude that D-sleep and S-sleep are needed for different purposes. The functions of D-sleep and S-sleep are distinguished. The deep sleep of the S-sleep cycle serves to restore the body physically, especially when one overexerts himself in physical activity. Desynchronized sleep serves as a restorative function to one's mental fitness such as mood, self-confidence and emotional status with his environment.<sup>28</sup>

As stated earlier, all men need sleep. For some a minimum of hours is sufficient to maintain good physical health. Others need a great deal of sleep. It is generally accepted that man needs about eight hours of sleep each night. However, from the results of a study

of a group of volunteers, it has been concluded that man is capable of as much as ten hours of sleep each night. The conclusion resulted from a study conducted by Dr. Eugene Aserinsky. He studied how much sleep an undrugged healthy person could endure in a twenty-four hour period. He found that on the average none of his patients were able to sleep more than ten hours without having any effects of insomnia the following night. He was able to conclude this by examining rapid eye movements. He studied the frequency of eye movement during each successive REM period, noticing that the frequency increased from one session to the next until about ten hours. After approximately ten hours of sleep the frequency leveled off. Aserinsky asserted that "as the frequency of rapid eye movements levels off after ten hours of sleep, it seems that some kind of satisfaction has been leveled off at that time."<sup>29</sup>

Ernest Hartmann, author of The Functions of Sleep, conducted two studies involving questionnaires to about 1000-2000 people each. These subjects were questioned about their sleeping habits and their requirements. His data revealed that at times of stress, depression, or change of occupation where mental work was increased, sleep requirement increased.<sup>30</sup> When "everything was going well" or when one was happy in his work, decreased sleep need was noted. Also noted with the increased sleep need there was a focus directed toward the inner self. With decreased sleep need a general outward focus of the individual was noted.<sup>31</sup> Relating to physical fitness, increased sleep need was noted where there was an increase in physical activity. However, those who felt that exercise was important needed less sleep when they exercised to a point where they felt good. When they did not get their daily exercise they required more sleep.<sup>32</sup> The fact that increased sleep needs are noted with stress and increased mental work is illustrated expertly by this example which involves a man in his 30's who spent most of his life as a laborer. Two years before he was interviewed by Ernest Hartmann, who conducted the study, he entered a university through a special program. This man's work changed drastically from manual labor to a significant increase in mental work. His previous education was limited, so he was under added pressure. In his interview two years later he reported that his average sleep need was one to two hours more than over previous years. Again, this illustrates that increased sleep need is associated with stress and increased mental work.<sup>33</sup>

In conclusion, man has learned much about the mechanics of sleep. He has learned that sleep is divided into two states, D-sleep and S-sleep. Each state is characterized by definite brain wave patterns. D-sleep is a dream state believed to be necessary to maintain the emotional status of the individual. S-sleep is believed to be necessary to restore the body physically. Although sleep requirement is unique to each individual, generally man requires 8 to 10 hours of sleep each day. Sleep requirement is altered by emotional aspects **such** as stress, depression or by intellectual or emotional work.

FOOTNOTES

<sup>1</sup>David Foulkes, The Psychology of Sleep (New York: Charles Scribner's Sons, 1966) p. 9.

<sup>2</sup>Ernest Hartmann, The Functions of Sleep (New Haven, Eng.: Yale University Press, 1973) p. 289.

<sup>3</sup>Gay Gaer Luce and Julius Segal, Sleep (New York: Coward-McCann, Inc., 1966) p. 9.

<sup>4</sup>"Sleep: How Much is Needed?" Newsweek, 19 February 1973, p. 24.

<sup>5</sup>Hartmann, p. 22.

<sup>6</sup>Edward J. Murray, Sleep, Dreams and Arousal (New York: Meredith Publishing Company, 1965) p. 63.

<sup>7</sup>Luce, p. 63.

<sup>8</sup>Ibid.

<sup>9</sup>Luce, p. 66.

<sup>10</sup>Ibid. p. 67.

<sup>11</sup>Ibid. p. 69.

<sup>12</sup>Ibid. p. 70.

<sup>13</sup>Ibid. p. 71.

<sup>14</sup>Hartmann, p. 23.

<sup>15</sup>Hartmann, p. 24.

<sup>16</sup>Hartmann, p. 25.

<sup>17</sup>Hartmann, p. 26.

<sup>18</sup>Luce, p. 72.

<sup>19</sup>Luce, p. 291.

<sup>20</sup>Luce, p. 73.

<sup>21</sup>Foulkes, p. 42.

- <sup>22</sup>Foulkes, p. 43.
- <sup>23</sup>Luce, p. 75.
- <sup>24</sup>Murray, p. 56.
- <sup>24A</sup>Hartmann, p. 22.
- <sup>25</sup>Murray, pp. 56-57.
- <sup>26</sup>Ibid. pp. 57-58.
- <sup>27</sup>Ibid.
- <sup>28</sup>Hartmann, pp. 145-147.
- <sup>29</sup>Newsweek, February 19, 1973, pp. 72-73.
- <sup>30</sup>Hartmann, pp. 71-73.
- <sup>31</sup>Ibid. p. 74.
- <sup>32</sup>Ibid. p. 75.
- <sup>33</sup>Ibid. p. 77.

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- "Sleep: How Much Sleep is Needed?" Newsweek, 19 February 1973. pp. 24, 72-73.

THE FEASIBILITY OF THE  
ARTIFICIAL HEART

by  
John L. Dawson

Research Paper Outline

Statement of Purpose:

The purpose of this paper is to discuss the feasibility of the artificial heart.

Outline

- I. Introduction: Reasons why scientists started the search for a substitute heart
- II. Development of the artificial heart
  - A. Problems with pumping blood
  - B. Types of artificial hearts
  - C. Power sources for artificial hearts
- III. Experimentation with artificial hearts
  - A. Experiments with animals
  - B. Experiments with humans
- IV. The future of artificial hearts
  - A. The costs of artificial hearts
  - B. Projected future for artificial hearts

## THE FEASIBILITY OF THE ARTIFICIAL HEART

In 1937, a Moscow surgeon built the first artificial heart and put it into a dog. The dog lived for only two and a half hours.<sup>1</sup> This was the first step forward in the search for a replacement for the human heart. The next step, according to Ron Davids, was not taken until 1957 when Doctors Willem Kolff and Tetsuzo Akutsu implanted an artificial heart in a dog at Cleveland Clinic.<sup>2</sup>

Cardiovascular disease is the number one killer in the United States. There are over one million deaths caused every year by cardiovascular diseases; six hundred thousand of these are caused by heart attacks.<sup>3</sup> Nineteen years ago, medical researchers started a search for some relief from this mass killer. The search, says Frederick E. Bryson, divided into two branches. One group worked on heart transplants, and the other group worked on a mechanical heart replacement.<sup>4</sup>

Doctor Christian Barnard performed the first heart transplant in December of 1967 in Capetown, South Africa.<sup>5</sup> After this milestone, many heart transplants were performed in the next few years. Then, according to Bryson, the original excitement generated over heart transplants died, since one hundred sixty-seven out of one hundred ninety-four heart transplant patients died.<sup>6</sup> One main problem with heart transplants is that the body rejects the foreign tissues of the new heart. The other branch being explored by medical researchers, the mechanical heart, has been approached with a little more caution and looks promising. Bryson says that the body will not reject an artificial heart.<sup>7</sup>

Doctor Denton A. Cooley is quoted by Freese as saying that "the heart is one of the simpler visceral organs. Most other organs serve a dual or a triple or even a quadruple purpose--but the heart is only a pump."<sup>8</sup> This does not imply that the heart is a simple organ to reproduce; only that it is one of the simplest to reproduce.

Although there have been many advances made in the development of the artificial heart, there are still some problems to be worked out. Bryson points out that there are two big problems with pumping blood: hemolysis (rupture of the red blood cells) and thrombosis (blood clotting).<sup>9</sup> Bryson continues that the artificial heart cannot form a partial vacuum because that will cause hemolysis. Neither can it have any dead spots, places where the blood could get trapped, because this would give it a chance to clot.<sup>10</sup> He says that currently, although designs are different, most artificial hearts operate without appreciable hemolysis.<sup>11</sup>

One possible solution, Bryson explains, to the problem of blood clotting when it comes into contact with man-made substances is to



grow an organic cover for the parts that are exposed to the blood. Two methods for doing this, he says, are: coating the exposed parts with a layer of polyester fibers which traps fibrin from the blood and forms a layer of tissue and laminating aldehyde treated homologous tissue from the hearts of other animals to the exposed parts.<sup>12</sup> Using the polyester filaments, he continues, has a disadvantage in that the tissue never quits growing. This can cause the pump to get clogged, or, sometimes the bottom layer of tissue starves and the top layers flake off and lodge somewhere which may cause death.<sup>13</sup> Bryson tells us that using the heart tissues of other animals as a base for tissue growth looks promising because the tissue reaches a maximum thickness of two millimeters.<sup>14</sup>

Another method for preventing thrombosis, according to Davids, is to coat the exposed parts with heparin, an anticoagulant, combined with protein.<sup>15</sup> A different method for preventing thrombosis, reports Davids, is to put a negative charge on the parts of the artificial heart that will come into contact with the blood. The negative charge, he explains, is thought to repel the clotting agents in the blood. This method appears very promising.<sup>16</sup>

Davids reports that there are two types of man-made hearts currently being developed: the total heart replacement and heart assist devices.<sup>17</sup> The moving parts of both types of artificial hearts must be pliant and strong, says Davids. To be used for a ten year period, they must be able to flex about thirty-six million times.<sup>18</sup>

As of April, 1972, Davids writes, more than thirty total artificial hearts had been constructed.<sup>19</sup> Bryson tells us that one problem in the development of a total artificial heart is regulation of the rate of beats. He says that it can be regulated by a "brain" that will speed the heart up if a certain percentage of the beats are full capacity or slow it down if a certain percentage of the beats are less than full capacity.<sup>20</sup> Bryson says that there is disagreement on how the blood should be pumped. Some people say that it should be pumped in surges like the heart does it. Others say that it can be pumped in a continuous flow.<sup>21</sup>

Time magazine reports that in 1963, Paul Winchell, the ventriloquist, patented a plastic heart. It was turned down by the American Heart Association and the American Medical Association because there was no working model. Doctor Willem Kolff, from the University of Utah, found Winchell's heart to be similar to one he was designing and asked Winchell to come to Utah and work with him. Doctor Kolff is the inventor of the artificial kidney.<sup>22</sup>

Stacy V. Jones reports that Doctor DeBakey, chief surgeon at Baylor University in Houston, and Doctor William Hall, from San Antonio, have developed an artificial heart. It is lined with dacron as a base for tissue growth. The left and right ventricles of their design can be operated at different pressures. Doctor DeBakey is known for his disagreements with Doctor Cooley.<sup>23</sup>

Bryson reports the Bio-Medicus, a company in Minneapolis, has developed an artificial heart that works on the "forced vortex" principle. This design is supposedly three times as efficient as the human heart. It is known as the Rafferty-Kletchka pump. If one pump is used, it functions as a heart assist unit. If two pumps are used, it functions as a total artificial heart.<sup>24</sup> Several of the new designs can be used as assist pumps or total artificial hearts.

The heart assist unit, says Davids, takes over about fifty percent of the heart's work load. This increases the blood flow and gives the heart a rest.<sup>25</sup> One type of temporary heart assist unit, according to Davids, is the intra-aortic balloon pump invented by Doctor Kolff. It consists of a tube with a small balloon-like sac on the end of it. This is inserted into an artery through an incision in the groin and threaded up into the aorta. There, it expands when the left ventricle is stopped and deflates when it is beating.

One type of "emergency pump" heart assist unit that does not require the heart to be beating to work, according to Davids, has been developed by Doctor Kolff. A tube is inserted into the left ventricle through an incision under the left armpit. The blood is pumped from the still heart back into the body.<sup>27</sup> This type of heart assist device, states Barbara J. Culliton, can be used when a heart attack victim is too weak to withstand immediate major surgery.<sup>28</sup> It could give the heart support until the patient became stronger.

There are now, says Bryson, four power sources for artificial hearts: external power sources--batteries or compressed air, batteries charged through the skin, nuclear power, and biological fuel cells.<sup>29</sup> Bryson explains that external power sources require leads to enter the body through the skin. This gives infection a port of entry into the body.<sup>30</sup> Bryson tells us that the National Heart and Lung (NHLI) has developed a battery that can be recharged through the skin. This type of power source has its disadvantages also. It would have to be recharged for two hours every day and replaced every two years. There would also be a psychological problem in that a patient would be dependent on a daily power source.<sup>31</sup>

Bryson claims that the most promising power source is a nuclear "power plant" that uses plutonium 238.<sup>32</sup> The blood, Bryson explains, would be used to cool the nuclear power supply unit. He continues that the NHLI says that this process will raise the temperature of the blood only about one to two tenths of a centigrade degree. Science News reports that the NHLI announced in March of 1972 that Lowell T. Harminson and a team of researchers had developed a nuclear-powered artificial heart. It used one hundred grams of plutonium 238. The engine, which would be carried in the abdomen of a human user, was encased in three layers of metal to protect it under "incredible accident conditions."<sup>34</sup> Bryson says that the nuclear power source would have its disadvantages also. He reports that a NHLI panel says that users could become sterile in ten to twenty years. There is a chance of leukemia for the user and his family. Another problem is the possible rupture of the fuel capsule.<sup>35</sup>

The biological fuel cell, explains Bryson, is a possible power source for the future. The fuel cell would draw its fuel from the blood, and its waste products would be carried away by the blood.<sup>36</sup>

Experimentation is an essential element in the perfecting of the artificial heart. Machine Design states that dogs are sometimes used in artificial heart experiments because they are more susceptible to blood damage than humans.<sup>37</sup> It reports that a Saint Bernard lived for seven days and six hours with an artificial heart assisting its natural heart. The artificial heart was removed so it could be checked and the dog's heart rate returned to normal. There were no blood clots formed on the device. The parts of this design are not flexible so they were coated with low-temperature carbon, which is practically inert to the blood. This is the Rafferty-Kletschka model.<sup>38</sup> Bryson says that this model is a centrifugal pump that has a nonpulsating flow.<sup>39</sup>

NHLI, says Bryson, tested an assist pump in a calf for over six months before it died. The animal died from infection that entered through the opening through which the compressed air tube entered the calf's body.<sup>40</sup> Newsweek reported in 1968 that Doctor John Norman had been testing a nuclear powered artificial heart in animals at Boston City Hospital. It continued that a dog lived for one year with the device, suffered no ill effects from radiation, and had a normal body temperature.<sup>41</sup> Davids reports that Doctor Kolff's "emergency pump" was used to keep a pregnant ewe alive for forty-four hours, and it gave birth to healthy twins.<sup>42</sup>

The use of the artificial heart as compared with a heart transplant has other advantages also. Bryson claims that the moral issues of implanting an artificial heart are less touchy than those connected with a heart transplant. No one has to die to provide the replacement heart.<sup>43</sup>

Harry Minetree writes that on April fourth of 1969, Doctors Denton A. Cooley and Domingo Liotta put a totally implantable artificial heart into Haskell Karp. This was done to keep him alive until a donor could be found for a heart transplant.<sup>44</sup> Minetree continues that the artificial heart kept Karp alive for over sixty hours before a donor was found. Then, thirty-two hours after he received the heart transplant, Haskell Karp died.<sup>45</sup>

Davids writes that on August eleventh of 1971, Doctor Adrian Kantrowitz put a heart assist unit in Haskell Shanks. The type of heart assist unit he used is called a patch booster. After three months and three days, Haskell Shanks died of kidney failure.<sup>46</sup> Bryson says that the patch booster used on Haskell Shanks was about six inches long and one and one fourth inches in diameter. It was sewn on the side of the descending aorta.<sup>47</sup> Business Week reports that Doctor Kantrowitz put a patch booster on another patient in 1972, but this one only lived for one week.<sup>48</sup>

Davids states that Doctor Kolff's intra-aortic balloon pump is

ideal for use in heart attack victims who need immediate relief for hearts. The device has been used in more than two hundred patients and two thirds of them survived. Without it, he explains, very few would have. This type of heart assist device will not work if the heart stops.<sup>49</sup>

The future holds many obstacles for the artificial heart program. One of the main problems will be cost. Having an artificial heart implanted is a major operation and therefore very expensive. The NHLI Artificial Heart Assessment Panel suggests that the high cost of artificial heart implantation could, in the future, be covered by insurance.<sup>50</sup> The following is a table of the "Estimated Present Values of the Resource Costs for Treating One Recipient (of a totally implantable artificial heart) for 10 Years with Four Different Systems" done by the Artificial Heart Assessment Panel.<sup>51</sup>

	NUCLEAR POWER	EXTERNAL SECONDARY BATTERY	LONG TERMS INTERNAL SECONDARY BATTERY	ELECTRICALLY POWERED INTERNAL HEAT ENERGY STORAGE
Artificial Heart Device	\$2,000 to 6,000	1,500 to 3,000	1,500 to 3,000	2,000 to 6,000
Initial Implan- tation and Associated Medical Care	15,000	15,000	15,000	15,000
Power Costs	4,734 to 13,093	13,652*	376 to 564	Insignificant
Total	21,734 to 34,093	30,152* to 31,652*	16,876+ to 18,564+	17,000 to 21,000

\*-Based on current cost levels for batteries rather than projected future costs which may be substantially lower.

+--Does not include costs of surgical replacement of battery every two years.

The feasibility of the artificial heart is aptly put forth in this excerpt from the Artificial Heart Assessment Panel's report:

In light of the information that the Panel has received, we believe that development of the totally implantable artificial heart should proceed. The scope and direction of the program should, of course, be periodically reconsidered relative to other programs directed towards prevention and treatment of cardiac disease.<sup>52</sup>

FOOTNOTES

<sup>1</sup>Ron Davids, "Man Made Hearts: Will They Supersede Transplants," Science Digest, April, 1972 p. 43.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid. p. 41.

<sup>4</sup>Frederick E. Bryson, "Countdown for the Artificial Heart," Machine Design, 13 June 1974 p. 34.

<sup>5</sup>Arthur S. Freese, "The Pump That Works Like a Heart," Popular Mechanics, November, 1970 p. 130.

<sup>6</sup>Bryson, p. 34.

<sup>7</sup>Frederick E. Bryson, "The Engineered Body," Machine Design, 25 January 1973 p. 21.

<sup>8</sup>Freese, p. 128.

<sup>9</sup>Bryson, "Countdown," p. 35.

<sup>10</sup>Ibid. p. 41.

<sup>11</sup>Ibid. p. 36.

<sup>12</sup>Ibid. p. 34.

<sup>13</sup>Ibid. p. 41.

<sup>14</sup>Ibid.

<sup>15</sup>Davids, p. 45.

<sup>16</sup>Ibid. p. 46.

<sup>17</sup>Ibid. p. 42.

<sup>18</sup>Ibid. p. 44.

<sup>19</sup>Ibid. p. 43.

<sup>20</sup>Bryson, "Countdown," p. 42.

<sup>21</sup>Bryson, "The Engineered Body," p. 22.

- <sup>22</sup>"Winchell's Heart," 12 March 1973 p. 70.
- <sup>23</sup>Stacy V. Jones, "DeBakey Invents Artificial Heart," Science Digest, December, 1973 p. 82.
- <sup>24</sup>Bryson, "The Engineered Body," p. 25.
- <sup>25</sup>Dauids, p. 42.
- <sup>26</sup>Ibid. p. 44.
- <sup>27</sup>Ibid.
- <sup>28</sup>Barbara J. Culliton, "Era of Plastic Hearts," Science News, 97 (1970) p. 376.
- <sup>29</sup>Bryson, "Countdown," pp. 38-39.
- <sup>30</sup>Bryson, "The Engineered Body," p. 22.
- <sup>31</sup>Bryson, "Countdown," p. 38.
- <sup>32</sup>Bryson, "The Engineered Body," p. 24.
- <sup>33</sup>Ibid.
- <sup>34</sup>"NHLI's Calf Has a Nuclear Heart Beat," Science News, 101 (1972) pp. 166-167.
- <sup>35</sup>Bryson, "Countdown," p. 39.
- <sup>36</sup>Ibid.
- <sup>37</sup>"Dog Alive and Well After Seven Days With Artificial Heart," Machine Design, 27 July 1972 p. 10.
- <sup>38</sup>Ibid.
- <sup>39</sup>Bryson, "The Engineered Body," p. 22.
- <sup>40</sup>Ibid. p. 25.
- <sup>41</sup>"Atom-Powered Hearts," Newsweek, 28 October 1968 p. 36.
- <sup>42</sup>Dauids, p. 44.
- <sup>43</sup>Bryson, "The Engineered Body," p. 21.
- <sup>44</sup>Harry Minetree, Cooley: The Career of a Great Heart Surgeon (New York: Harper's Magazine Press, 1973) pp. 53-68.
- <sup>45</sup>Ibid. pp. 77-78.

<sup>46</sup> Davids, p. 41.

<sup>47</sup> Bryson, "The Engineered Body," p. 21.

<sup>48</sup> "Artificial Heart Begins to Beat," Business Week, 21 October 1972 p. 86.

<sup>49</sup> Davids, p. 44.

<sup>50</sup> U.S. Department of Health, Education, and Welfare, National Heart and Lung Institute, The Totally Implantable Artificial Heart: Legal, Social, Ethnical, Medical, Economic, Psychological Implications. A Report of the Artificial Assessment Panel (Washington D.C.: Government Printing Office, 1973) p. 191.

<sup>51</sup> Ibid. p. 202.

<sup>52</sup> Ibid. pp. 196-197.

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- "Winchell's Heart." Time, 12 March 1973. pp. 70-71.



## ANALYZING THE ANALYST

by

Robert J. Hesch

In most academic endeavors, the student is confronted with a vast and complicated network of theory. It often seems that the theory becomes so intricate and cumbersome as to yield itself impractical. At any rate, the student may lose sight of "the forest, for the trees," perhaps grasping the mechanics of the theory, while, at the same time having little or no feel for how the bits of theory yield themselves to the total picture.

The student of today is, of course, the practitioner of tomorrow. As he carefully bridges the gap from the academic world to the pragmatic world, he's bound to feel somewhat incompetent with only half remembered and seemingly noncorrelated pieces of theory to guide him on to success. No doubt he knows more than he's given himself credit for knowing, but insecurity may humble him enough to struggle through those few transitional months. The question is: Does he save the valuable theory to be drawn upon at a more opportune time, or does he allow the theory to dissipate in favor of generally accepted practices in the field?

The answer depends on the discipline to a certain extent. If members of academia and practitioners are in agreement he'll find no transition, only a continuance. If, however, he is a student of finance, specifically of investments, he will find a deep abyss between the university steps and those of the financial institution.

It seems I've assumed a wide gap, but in fact this endeavor was initiated to discover if any gap exists. To accomplish this task, it was first necessary to become familiar with the theory, then enter the financial world briefly, and compare the first with the second.

The understanding of modern investment theory begins with the random walk hypothesis, continues to the theory of efficient markets, and goes further to Markowitz's diversified portfolio model.

The random walk hypothesis is a contradiction of both technical and fundamental analysis. Technical analysis assumes that past price patterns of an individual stock will recur in the future. Therefore, by analyzing the past trends of a security, the analyst can predict the future price of the stock. Basic to technical analysis is that all information is not equally distributed throughout the market, nor is all information rationally analyzed. Because of these two factors, prices do not instantaneously reflect a piece of information, but reflect information gradually. Therefore, the technician who can correctly identify a price trend before the information is fully reflected in the price can gain from past price trends of a stock.<sup>1</sup>

The fundamentalists, on the other hand, believe that the intrinsic value of a stock may differ from the actual price of the stock in the short run, but in the long run the intrinsic value will equal the actual market value. The fundamentalist then is concerned with analyzing economic trends, quality of management and industry trends in an attempt to find a discrepancy between intrinsic and market value.<sup>2</sup>

In essence, the random walk hypothesis suggests that successive price changes of a stock are independent of one another. Underlying this theory is the assumption that the market is perfectly competitive and efficient. The present price of a stock then is the result of competing buyers and sellers in the market reacting to new information. Each new piece of information is quickly disseminated to buyers and sellers, who in turn react to such information in arriving at a new equilibrium price. Each new price change, then, is independent from other price changes because each results from a different piece of information. In other words, knowledge of previous price changes do not necessarily lead one to a correct prediction of future price movements. Thus, the name "random walk" suggests that stock prices move in a random fashion.<sup>3</sup>

Does this mean that there is no reason or design to the price a stock is assigned? No. In fact, the theory explains why prices act in such a precarious way. Certainly a valid place to start in predicting the future price a stock would attain would be the price at which it is presently values.<sup>4</sup> Then the question is where will it go next, or more pertinently, why will it move, in what direction, and with what magnitude over a given time period? The "why" is, of course, the key to understanding. Stock prices move in accordance with the occurrence of events. Changes in management, change in dividend policy, economic outlook or government intervention are just a few of the myriad of reasons for a change in stock prices. To correctly pinpoint the future price then, future events would have to be correctly predicted. This would be (and is) a premium on soothsayers and sages with the ability to correctly forecast future events. It seems ironic then, that with all the skepticism toward psychics claiming to foretell the future, that there is an expectation, even demand, that competent analysts should predict future prices.

In a world where future events are not known with certainty, analysts continuously collect information that has been quickly disseminated through financial channels. Their goal is to immediately evaluate this data to come up with an intrinsic value--the value the stock should be. They then compare the intrinsic value with the actual market value hoping to gain from any discrepancy between the two. This method ignores the implication professed in the efficient market theory.<sup>4</sup>

The efficient market theory suggests that prices of stocks react rapidly to new information. The resulting prices then are appropriate in light of all widely disseminated information. This suggests that it would be very difficult for investors to discover stocks with an intrinsic value different from the market value because all new information is already reflected in the price of the stock. It is, there-

fore, less likely for investors to earn extraordinary gains from the analysis of knowable and relevant information. Futher, "to do unusually well in selecting investments, one must have superior insight and abilities to see into the murky future better than other investors."<sup>5</sup>

There are primarily three forms of the efficient market theory: the weak form, the semistrong form, and the strong form. The differences are attributable to the different levels of available information. The weak form holds that the present price reflects all known historical data. This form is probably the most accepted form by the practicing analyst. The weak version states that analysts cannot achieve superior performance by the analysis of past stock price patterns. This results from the fact that the present price already reflects all such past information. One cannot then, according to the weak form, expect superior results based on analysis of historical data.

The semistrong form asserts that current public information is instantaneously reflected in stock prices. Because this information is communicated so quickly, and because there are so many, presumably rational investors, competing to outperform one another, all this information is quickly and efficiently analyzed to determine the effect on stock prices. For all practical purposes, the analysis is instantaneously reflected in current stock prices, prohibiting any one investor from continually attaining superior results.

The strong form goes still further in asserting that all knowable information is reflected in stock prices. This version is particularly distressing to analysts because it implies that no matter how thorough the analyst is in his study, he cannot consistently achieve superior performance. Even while he is hard at work in his analysis, there are several thousand other professional analysts scrutinizing comparable information in an attempt to beat their colleagues to the financial punch. Again, because of sophisticated communications and competing techniques, all available information is immediately reflected in a stock's price.<sup>6</sup>

Two final points about the efficient markets hypothesis are in order. First, it seems plausible that from the vast body of intelligent professionals or educators, someone would develop a successful system or model for predicting stock prices. This is the crux, and precisely the contention, of the theory. Assuming a successful model is developed, the practitioner reaping the benefits will soon achieve the attention of other practitioners. Just as fast as a model is recognized as successful, it will negate itself. More clearly, when enough investors believe in a model, the stock's value, as determined by the model, will already be reflected in the current price of the stock. Therefore, it is impossible to consistently achieve superior performance, but entirely possible to achieve superior performance in the short run. This conclusion is not in contradiction of the hypothesis, but rather supports it. The point is that to achieve superior results, analysts must innovate new models continually.<sup>7</sup>

The second and final point is the irony of the efficient market hypothesis. For the hypothesis to correctly depict the market, it is necessary for the majority of practitioners to disbelieve it. In their disbelief, investors will continue in their attempt to achieve superior results through a rational analysis of information. If the analysis reveals a discrepancy between the intrinsic and market values, the discrepancy is quickly--and efficiently--swept away by competing buyers and sellers. The result is that the intrinsic value is the market value, or more correctly, an equilibrium value resulting from competition of investors working with identical information.<sup>8</sup>

It may seem appropriate (after the analyst has developed some valuation technique and applied it to a number of stocks) to simply determine that stock with the highest expected return and invest all funds in that stock. This procedure would, in fact, be appropriate if risk and uncertainty were not involved. Because risk does exist, investors find it advantageous to diversify their investment dollars rather than simply maximizing expected return. It is necessary, as Markowitz has advocated, to look at groups of several stocks rather than single stocks. It is not appropriate to look at a single stock in isolation because of the interactions other stocks in the portfolio may have with one another (assuming, of course, the investor cares to take advantage of the benefits in diversification).

There are, then, two considerations in determining the attractiveness of a portfolio. The first consideration is return, the second consideration is risk. The return on the portfolio is the weighted average of the return on each security. For example, three securities X, Y, and Z have an individual rate return of 6 percent, 10 percent, and 7 percent, respectively, and \$50.00 is invested in X, \$25.00 in Y, and \$25.00 in Z, the expected rate of return would be:

$$R = \sum_{i=1}^n R_i X_i \quad \text{where:}$$

R = expected return  
 $R_i$  = expected return on individual security i  
 $X_i$  = proportion invested in i th security

$$R = (.06) (.50) + (.10) (.25) + (.07) (.25)$$

$$= .03 + .025 + .0175$$

$$= .0725 \text{ or } 7.25\%$$

If risk were not a consideration, the efficient portfolio would consist of \$100.00 invested in stock Y since the rate of return on Y is 10 percent and exceeds the 7½ percent return on the portfolio. However, with a one stock portfolio, it is possible that a single occurrence could result in the expected return not being realized. By adding a stock to the portfolio (a stock say from a different industry), with price changes unrelated to the original one stock portfolio, it is possible to avoid the chance that a single event would undermine the entire investment.

To determine the risk of a single security, all possible returns

are plotted against the probability of their occurrence yielding a probability distribution. The standard deviation of this distribution then is the measure of risk for that security. The goal is to minimize the standard deviation. Given the choice between a stock with an expected return of 6 percent and a standard deviation of 5, and a stock with an expected return of 6 percent and standard deviation of 8, the former stock is preferable.

The next step is to compute portfolio risk. Although expected return for the portfolio was simply the weighted average of the single security's expected return, portfolio risk is not the weighted average of single security risk. This is so because of the interaction of securities with a portfolio. The riskiness of a single security portfolio would be more than if an additional security were added, given that the price changes of the additional security were not dependent upon the same variables as the price changes for the single security portfolio. In other words, portfolio risk can be reduced from the weighted average risk of its component securities if those securities are not highly correlated.

The measure of the correlation between two stocks is the correlation coefficient. If the correlation between two stocks is perfect, so that the price movement of one is matched by a proportional price movement in the other, the correlation would be +1. This might be the case with two oil company stocks. With a correlation of +1, the benefits of diversification are zero since the stock's prices move in perfect lock-step, obviously subject to the same variables.

If, on the other hand, the correlation coefficient were -1, the benefits of diversification would be optimal. As the price of one stock changes, the sister stock change by an equal amount in the opposite direction.

The covariance of the stock measures the interaction between two stocks. This interaction, if proper diversification is employed, reduces the range of possible portfolio risk. Statistically, the covariance is:

$$\sigma_{ij} = \sigma_i \rho_{ij} \sigma_j \quad \text{where:}$$

- $\sigma_{ij}$  = covariance between stock i and stock j
- $\sigma_i$  = standard deviation of stock i
- $\sigma_j$  = standard deviation of stock j
- $\rho_{ij}$  = correlation coefficient between stock i and stock j

From the formula it is apparent that the higher the standard deviation and correlation coefficient, the higher will be the covariance and hence the overall portfolio risk. Pragmatically, the objective is to minimize covariance, given a population of securities. This follows from the formula for portfolio variance:

$$\sigma_{ij}^2 = \sigma_i^2 \chi_i^2 + \sigma_j^2 \chi_j^2 + 2 \sigma_i \rho_{ij} \sigma_j \chi_i \chi_j$$

or for the more general case of n securities:

$$\sigma_p^2 = \sum_{i=1}^n \sigma_i^2 \chi_i^2 + 2 \left[ \sum_{i=1}^n \sum_{j=1}^n \sigma_i \sigma_j \rho_{ij} \chi_i \chi_j \right]$$

- $\sigma_p^2$  = portfolio variance
- $\sigma_p$  = portfolio standard deviation for n securities
- $\sigma_i^2$  = variance of return on security i
- $\sigma_j^2$  = variance of return on security j
- $\sigma_i$  = standard deviation of return on security i
- $\sigma_j$  = standard deviation of return on security j
- $\rho_{ij}$  = correlation coefficient between security i and security j
- $\chi_i$  = proportion invested in security i
- $\chi_j$  = proportion invested in security j

To illustrate how portfolio variance reacts to differing correlation coefficients (and therefore covariances) the formula will be worked through with correlation coefficients of -1, +1, 0, respectively. Assume  $\sigma_i = 3$ ,  $\sigma_j = 5$ ,  $\chi_i = .5$ ,  $\chi_j = .5$ .

When  $\rho = -1$

$$\begin{aligned} \sigma_{ij}^2 &= \sigma_i^2 \chi_i^2 + \sigma_j^2 \chi_j^2 + 2 \chi_i \chi_j \sigma_i \rho_{ij} \sigma_j \\ &= (3)^2 (.5) + (5)^2 (.5) + 2(3)(5)(-1)(.5)(.5) \\ &= (2.25) + (6.25) + (-7.5) \\ &= 1 \end{aligned}$$

When  $\rho = 0$

$$\begin{aligned} \sigma_{ij}^2 &= 2.25 + 6.25 + 0 \\ &= 8.5 \end{aligned}$$

When  $\rho = +1$

$$\begin{aligned} \sigma_{ij}^2 &= 2.25 + 6.25 + 7.5 \\ &= 16 \end{aligned}$$

The example illustrates that as the correlation coefficient increases, so does the portfolio variability, until with the correlation coefficient of +1, the standard deviation for the portfolio is equal to the weighted average standard deviation for the component securities.

$$\begin{aligned} \sigma_i + \sigma_j &= (\chi_i)(\sigma_i) + (\chi_j)(\sigma_j) \\ &= (3)(.5) + (5)(.5) \\ &= 1.5 + 2.5 \\ &= 4 \end{aligned}$$

(Since  $\sigma_{ij}^2 = 16$ , then  $\sqrt{\sigma_{ij}^2} = 4$ )

This demonstrates that diversification can reduce portfolio risk only when the correlation coefficient is less than one. Intuitively, if expected return for two stocks are dependent on the same variable, there is no more benefit from using the two stocks than there would be from using just one.<sup>9</sup>

The above theory is, by no means, an all inclusive list of security analysis and portfolio theory. It is, however, a brief summary of where contemporary theory is based. If practitioners were utilizing modern theory, their techniques would closely resemble what was previously outlined. To discover if this was the case, it was necessary to enter the world of financial institutions.

For reasons of economy and convenience, Atlanta was chosen as a fair representative of the financial community. For a brief four hours, I listened to the executives of a private investment company handling assets of approximately \$1.2 billion, 300 million being handled by the Atlanta office.

The highlight of those four hours was a conference call, where the eastern offices were linked, by telephone and speakers, to the Atlanta office. Conversation centered around general economic events, with a long digression about a technical problem encountered in the drug industry. The attention was then focused on the state of the British economy, and several doomsday predictions were voiced. While very interesting, the meeting provided no answers to the questions at hand.

After the meeting, I talked with the manager of the Atlanta office about security selection and portfolio management. He was a youthful Harvard graduate and I expected him to quote Markowitz and Sharpe verbatim et literatim. To initiate the conversation, I gave him a page of statistical symbols that were variations on computing portfolio variance. His reply was that, "analysis is not pure mechanics," adding, "be a businessman first, an analyst second."

Further prodding disclosed that being an analyst meant a vigorous disbelief in the efficient market hypothesis. To devote one's life to security analysis, it is necessary to believe you can consistently generate superior performance. (Although this is an easy argument to sympathize with, it is faulty if analysis entails the traditional manipulation of information.) Ensuing discussion revealed that the basic strategy in selecting securities was to analyze economic trends, choose industry leaders most likely to benefit from such trends and review that firm's strategy. The entire technique appeared to neglect the elementary basis of the efficient market hypothesis: other investors are analyzing the very same data, at the same time, arriving at similar conclusions. Further, the price of the security in question has instantaneously reflected the impact of all such information.

Later conversations centered around portfolio theory. The investment manager felt that a portfolio manager could never stop being a security analyst. He believed that a good manager did much of the research and selection of individual securities. He appeared to believe in a "seat of the pants" type operation, where a portfolio manager is led as much by "gut" reactions as by technical tools. Clearly, he viewed a portfolio as a group of single securities rather than a single entity.

More importantly, there was no attempt to quantify overall portfolio risk. After a questionnaire is completed by a prospective investor, a formal statement of objectives is written by the firm. Apparently, the theory I sought was not to be found in this institution.

The following day was spent in the trust department of a large Atlanta bank. There was a definite sense of organization that immediately impressed any outsider. At 9:00 AM I met with the Vice-President of the securities department.

Over coffee, I decided to use tact, and subtly thrust a page of statistical symbols upon the Vice-President. He reacted by turning the page, first sideways, then upside down, in an attempt to decipher this new oddity. His responses were refreshing. No. He truthfully didn't understand what the scrawl meant, but showed a genuine interest in both me and the bits of theory I'd pieced together.

He did believe in the soft version of the efficient market hypothesis, but like so many other analysts, couldn't accept any stronger version of a theory that seemed to question the analyst's worth. In departing from traditional analysis, he advocated all the generally accepted procedures (economic forecasts, industry studies, management visits, valuation models like Cohen and Zinbarg, etc.) but, as an extra step, attempt to discover unique aspects of the firm under study. There was no one thing to look for, but he compared the analysis to a picture puzzle with a piece missing. Traditional methods of evaluation are used to piece the puzzle together until the analyst has found the missing part. The determination of the missing piece gives the analyst a unique view and a slight edge on his colleagues.

Further, he cited an instance where the bank was heavily invested in a soft drink company. While piecing together the economic puzzle, an analyst noted rising sugar prices. Rather than sell their very large holding in the soft drink company stock, the bank invested in processors of soy beans. Since soy beans are a sugar substitute, the price of each varies inversely with the price of the other. The strategy of the bank was to hedge against the unfavorable outlook for the soft drink firm.

This strategy was very interesting since it would accomplish results similar to that advocated by the portfolio model. In theory, the object is to minimize portfolio risk by minimizing correlation coefficients and in turn portfolio variance. The correlation coefficient of the soft drink stock and soy bean stock would probably be low, if not negative, because of the nature of substitute products. Hence, the bank was acting consistently with portfolio theory without **having** actually used the model or quantified portfolio risk.

By mid-morning I was talking with one of several portfolio managers in the trust department. He functioned solely as a portfolio manager, although he remembered when a portfolio manager did his own



research, selected stocks, interviewed clients, put portfolios together, and swept the floor. He, too, could make no sense of the statistical jargon I gave him. He had no idea what covariance his portfolios had, but said risk was measured as a verbal objective for different types of portfolios.

Later, I talked with the head of the research department, together with the Vice-President. The research analyst was familiar with the portfolio variance model, and most of the theory following Markowitz. He used none of it in his work, but felt there might be a need for it as a supplemental tool. This same view was expressed later by several of the other analysts. The only suggestion for why the theory was not presently used was because it was cumbersome and impractical. (Surprisingly, no computers were used by any of the staff in the trust department.) The major reason the analysts were acquainted with covariances and efficient markets was because of preparations for C.F.A. exams. Were it not for that, I may have seriously questioned the validity of my preparations.

The analyst's approach to the research of a company involves a multi-faceted process. First, the industry situation is reviewed. In this review, levels of supply and demand, general economic trends, the labor situation, government regulation, and materials' availability are all considered, along with severity of competition and pricing practices. Next, the industry is evaluated for current and historical performance with particular emphasis on the "whys" of such performance. Financial considerations are then analyzed, including capital expenditures, (both past and projected) with emphasis on how dividends are affected. Finally, an outlook for the industry is projected for near term and long term.

The company is then analyzed according to the same criteria, but the analysis is supported by management comments. Such comments are provided through company visits by the analyst or intermediaries such as brokers. Information is supplied by Federal Reserve Publications, The Department of Commerce, trade journals, the company's prospectus and annual reports, and public sources such as Moody's and Standard and Poor's Surveys.

The company is further analyzed with regard to product dependency, management reputation, and overall characteristics, for example: distribution methods, trade names and patents, financial position and management changes.

The result of this analysis is a recommendation symbolized by a number from one through five. The number one indicates the stock should definitely be purchased; the number two means the stock may be acquired; three is a recommendation to hold, but not an authorization to buy; four indicates the stock may be sold; and five is a recommendation to sell.

At this point, the analyst should attempt to quantify risk by utilizing a probability distribution. He should then compute the vari-

ance. This, however, is not the case. When the portfolio manager views the recommended list of securities, there is no variance or correlation coefficient. There is only a single number, from one to five. This single number in no way aids him in determining portfolio risk or in bridging the gap from practicum to academia.

In summary, there does exist a large abyss, partitioning the academics from the professionals. Why this gap is there and whether it will someday be bridged is still left up to speculation. My personal goal is to broaden the range of my theoretical knowledge with the intent of utilizing it. There may be a time when it's more than mere theory. Meanwhile, investors may do well to heed the advice of Mark Twain:

"October is one of the peculiarly dangerous months to speculate in stocks in. The others are July, January, September, April, November, May, March, June, December, August and February."

FOOTNOTES

<sup>1</sup>Sumner M. Levine, Financial Analyst's Handbook No. 1 Portfolio Management (Homewood, Illinois: Richard D. Irwin, Inc., 1975) pp. 1226-1234.

<sup>2</sup>Donald E. Vaughn, Survey of Investments (Hinsdale, Illinois: The Dryden Press, 1974) pp. 250-251.

<sup>3</sup>Steven E. Bolten, Security Analysis and Portfolio Management (New York: Holt, Rinehart & Winston, Inc., 1972) pp. 369-370.

<sup>4</sup>Lorie and Hamilton, The Stock Market (Homewood, Illinois: Richard D. Irwin, Inc., 1973) p. 114

<sup>5</sup>Ibid. pp. 100-101.

<sup>6</sup>Levine, pp. 1232-1234.

<sup>7</sup>Lorie and Hamilton, p. 101.

<sup>8</sup>Ibid. p. 98.

<sup>9</sup>Ibid. pp. 171-183.

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DOSTOEVSKY, KIERKEGAARD, AND NIETZSCHE:  
A PERSONAL STATEMENT

by  
Phyllis E. Alsdurf

Despite their obvious dissimilarities, their various perspectives on Christianity, and the different paths they pursued in their searches for God, Fyodor Dostoevsky, Søren Kierkegaard and Friedrich Nietzsche all spoke a similar message of challenge that has led me to some radical re-evaluation.

Nietzsche, with his message to the strong--the Superman, his opposition to every form of weakness--mental, physical and moral and his disdain for the "Other Worldly", seems an unlikely parallel for either Kierkegaard, who rejected this world and through a "leap into the dark" accepted an irrational and paradoxical Christianity, or Dostoevsky, who by delving into the souls of the characters he created, pointed to the weaknesses and contradictions within all men. Moreover, while both Kierkegaard and Dostoevsky have decidedly Christian overtones to their writing (not doubting God but dealing instead with the problems resulting from His existence), and display humble reverence for Christianity (if not the organized church), Nietzsche attacks both the church and Christian ethics as representing a slave morality which has invented a god to explain away the meaninglessness of life and to shield men from facing reality. Yet, it is precisely because they come from different points of view to shed different lights on the God-man relationship that Nietzsche, Kierkegaard, and Dostoevsky were all able to challenge my own thinking and to illuminate for me the narrow limits within which I had confined my God.

Before chronicling that relective interaction, consideration must be given to the similarities of these authors. For all three, writing came not through objective observations about life but was the fruit of deep experiences of suffering (emotional, physical, and spiritual) and the result of personal grapplings with the very essence of what existence entails. Theirs was an existential writing, not an objectified theory or neatly-outlined schema on life. Kierkegaard and Nietzsche, for instance, rejected the systematization of Hegelian philosophy and sought a philosophy relevant to the individual, one that could be lived. Similarly, the philosophies underlying The Brothers Karamazov and Thus Spake Zarathustra appeared to be in the process; answers were being worked out through the course of each book. Such writing retains a quality of immediacy, freshness and timeliness regardless of the era in which it was written. Also, because of the self-revelatory nature of these works and Kierkegaard's writing as well, I was forced to become involved in the risk the authors had personally taken and admit that their great insights into themselves, in particular, and mankind, in general, must ultimately lead me to introspection if I were to honestly inter-

act with the material.

To the extent that existentialism is characterized by a focus on what it means to exist for the individual, a quest for meaning which emphasizes the spiritual and introspective--not the intellectual and scientific or objective--as the avenue for truth, and a preoccupation with freedom and what it means to be free, the philosophies of Nietzsche, Kierkegaard, and Dostoevsky all, to some degree, fit into that loosely-defined category. Though Dostoevsky is not generally classified as a major existentialist, the beginnings of an existential view are seen in Ivan's statements that there is neither God nor immortality but "absolute nothingness" and Father Zossima's advice to Madam Hohlakov on how she could be convinced of God's reality: "By the experience of active love. Strive to love your neighbor actively and constantly. In so far as you advance in love you will grow surer of the reality of God and of the immortality of your soul. If you attain perfect self-forgetfulness in the love of your neighbor, then you will believe without doubt. Doubt will no longer be able to enter your soul." (p. 60). Father Zossima's advice hints at the type of the faith Kierkegaard considers in Fear and Trembling. It is a paradox, a system of either/ors that must be experienced, lived and which defies rational comprehension. Belief alone comprehends the paradox.

All three authors relate their own stories in some way through their writing, working relentlessly to tear away the "masks" men wear and reveal what lies behind them. In their concepts of a higher man, Kierkegaard is only thinly camouflaged behind the person of Abraham and Nietzsche even less so behind Zarathustra and his Superman. While Dostoevsky, too, hints at such an Overcomer in the righteousness of Alyosha and Father Zossima, his identification with his characters is not limited there. Fittingly, Dostoevsky is portrayed in part through the contradiction within and between many of his characters--through the passions of Dimitri and the intellectual questionings of Ivan as well as in the spiritual beauty of Alyosha.

Unlike Marx, neither Kierkegaard, Nietzsche nor Dostoevsky look to the culture or social conditions for the source of man's problems. They instead see the confusion in society and the external world as the outgrowth of man's spiritual or inner problems. Kierkegaard and Nietzsche, in particular, and Dostoevsky, to a lesser degree (thanks to an initial period of public recognition), in their stands against the prevailing rationalistic philosophy and in their prophetic messages that forewarned the breakdown of Europe's rotting moral and ethical system, were publicly scorned and unreceived. They stood against what Nietzsche called "the herd animal" which had become the norm in middle-class Europe--"something eager to please, sickly, and mediocre." (Beyond Good and Evil, p. 76). Kierkegaard recognized and accepted the misunderstandings his thoughts engendered as part of his personal sharing in the loneliness, rejection and suffering essential to Christianity. Shortly before his death he wrote, "And after my death they will all praise me in such a manner that the young people will believe I had been respected and revered in life. This too, is part of the metamorphosis that truth suffers...in reality.

The same contemporaries who have acted despicably will use the moment after death to say the contrary of yesterday, and thus everything will be confused." (Hubben, p. 12)

Nietzsche, likewise, was aware of his solitary position when he wrote from Venice in 1884: "Fifty years from now a few perhaps... will have eyes to see what has been done through me. But at the moment it is not only difficult, but completely impossible...to speak of me in public without falling far short of the truth." He continued (prophetically) in the forward of The Will to Power: "What I am telling is the story of the next two centuries. I am describing what is coming, what can no longer happen any differently: the rise of nihilism. This story can already be told; necessity itself is here at work. This future speaks already through a hundred signs, this fate is announced everywhere; to this music of the future all ears are already tuned." (Lowith, pp. 189-190)

By their daring to live with uncertainty, with not knowing or being able to categorize everything, with not seeing things always as black or white, Nietzsche and Kierkegaard were especially challenging to me. Coming out of the dogmatism of the fundamentalist Christian tradition, I have had a difficult time reconciling myself to the fact that all Christians are not called to the kind of involvement or commitment to which I have been called and that diversity is necessary as a guard against imbalance and a beauty within the Church that does not need to be neutralized. The unity of the Spirit does not imply conformity and banishment of those with differing views, backgrounds, etc. I have long given lip-service to this position but to actually mean it and refrain from judging (mentally or verbally) all the different strains of Christians who do not share my need for a particular commitment or my interpretation of Scripture on a particular point, has been hard in coming. Yet when someone like Nietzsche--a nihilist, smiling in the face of despair--is so radical as to accept reality for what it is, to put his life on the line in an attempt to get beyond good and evil, can I, within a Christian framework, do less and avoid Christianity's call to radicalism?

But doesn't being a Christian, because of the absolute nature of its Truth, require some pigeonholing of people, a fitting of their actions and views into certain categories? Kierkegaard did not seem to think so. The more concretely (black and white) we speak of God, he said, the lower our level of comprehending Him. On the contrary, Kierkegaard took the "risk" of creating meaning out of nothing by believing in Christianity--not as a system but as a faith that is lived. To him Christianity involved becoming, not being, and meant continual suffering and living with uncertainty.

Granted, both Nietzsche and Kierkegaard--at different extremes--go too far. What Nietzsche saw in the church of his day--an impotent love, fear of truth, sacrifice of freedom, avoidance of risk, self-righteous "suffering"--he unjustly superimposed upon Christianity as a whole. In its place he offered a philosophy with an ultimate end in no value judgements at all. He wanted to reject all the false structures before him and ended up establishing just one more. And

Kierkegaard rejected all rational apologetics because they kill Christian faith, thus leaning dangerously close to the view that it is more important how you believe than that you believe the right thing. But through both comes a much-needed caution. By focusing on the absolute character of the gospel, I have lost sight of the freedom it promises and the uncertainty such freedom entails. I have been anxious to eliminate any uncertainty or "dread" from my relationship to God by trying to make Him totally understandable, completely within my grasp. Kierkegaard has shown me that I have been defensive, opting for a God that is very small, one who fits within my rational framework and provides answers and explanations for everything. My faith has been so conditional and tied firmly to the universal. It has lacked the passionate commitment of belief to the absurd. Nietzsche has bolstered that position by showing how inadequate the categories of good and evil are for making clear-cut judgments about others in so many areas of life. And his scathing criticisms of the church apply to me and my Christian experience in many ways.

What Nietzsche and Kierkegaard point to, Dostoevsky further develops through the "Tale of the Grand Inquisitor". I have been wanting bread, security, satisfaction in this world, instead of accepting freedom and the problematic which are all the Christianity promises. I thought I had, as Kierkegaard, taken the "leap" into the dark abyss, but in reality it had been a leap into a controlled systematized world with a domesticated God whom I could "handle". How Dostoevsky pinpoints my particular problem--the longing for "some means of uniting all in one unanimous and harmonious ant heap"--here through the words of the Grand Inquisitor:

So long as man remains free he strives for nothing so incessantly and so painfully as to find someone to worship. But man seeks to worship what is established beyond dispute, so that all men would agree at once to worship it. For these pitiful creatures are concerned not only to find what one or the other can worship, but to find something that all would believe in and worship; what is essential is that all may be together in it. This craving for community worship is the chief misery of every man individually and of all humanity from the beginning of time. (p. 235)

Christianity means faith, not the synthesis of all the dialectical dilemmas in life. Somewhere along the line I have made the unwarranted assumption that since Christianity is the "right" way, all answers to all life's questions are available. It is just a matter of digging them out. More and more I have looked to the rational defenses for Christianity as the basis of my faith. While I cannot, like Kierkegaard, at this point see them as irrelevant, I am beginning to put them back into their proper perspective. And that means some radical changes in my ways of relating to both Christians and non-Christians and in my conception of myself as a Christian. I do not want a faith that is limited to the rational; I want one that believes to the absurd. For instance, the loneliness of taking unpopular stands or of being misunderstood and wrongly judged is not



something to avoid at all costs by trying to make everyone agree with me or "like" me, under the motivation of an insecurity. Nor does it mean becoming a self-proclaimed "martyr". Rather, it requires an identification in the Cross of Christ which supersedes the universal or ethical.

In The Brothers Karamazov, Dostoevsky stacks paradox upon paradox, presenting his characters as "doubles", manifestations of the either/or. Through them he says that all men are full of contradictions--a confusion of the divine and human, the beautiful and ugly, the good and evil. While faith alone can break through this relativism, its only certainty is freedom. And that is not a freedom which implies individuality, moralism, self-sufficiency and pride. Its foundation is the suffering implicit in "bearing one another's burdens" and in seeing all men as brothers.

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## THE MEANING OF LOVE

by

Bob Hobson

What a difficult task, to write about love. James Taylor shows recognition of love's pervasiveness and ambiguity when he sings "Love is just a word I've heard when things are being said."<sup>1</sup> The importance of love in our society is demonstrated by the many relationships to which we ascribe this concept, in much the same way Eskimo society attaches many meanings to the concept of snow because of the crucial role it plays in adaptation to their environment. We speak of parental love, brotherly love, romantic love, love as sex, love for animals, and on and on. One must attempt to discover common qualities found in these relationships, and discard those relationships which may often be popularly characterized as involving love but really seem to involve other qualities. In the search for common qualities it becomes useful to adopt C. S. Lewis's division of love into Need-love and Gift-love, though making significant alterations in these concepts as they are found in his book The Four Loves. Need-love involves giving of ourselves because we need to give. It is "that which sends a lonely or frightened child to its' mother's arms."<sup>2</sup> According to Lewis, Gift-love is unselfish, independent of need, and is possible only through association with God's love. It "moves a man to work and plan and save for the future well-being of his family, which he will die without sharing or seeing."<sup>3</sup> If one looks beneath the surface of Gift-love, however, it seems that Gift-love is also motivated by an individual's needs. Thus this more subtle form of Need-love is not really Gift-love at all. Throughout this paper the word love will be used synonymously with Lewis's Need-love. Even though love is basically selfish in motivation, we can shape ourselves and others to satisfy needs by giving of ourselves, rather than adopting a more apparently selfish, hedonistic orientation toward need satisfaction by abusing, or taking from others.

Before proceeding, it is necessary to consider in greater depth what we can discover about man's nature by observing his behavior. Man's behavior seems to be determined by both biological and environmental influences. Biological influences on behavior include all of the pre-programmed characteristics an individual inherits from his parents. The environment influences behavior in other ways. Any emitted behavior is followed by environmental consequences, and the consequences of this behavior determine the probability of its reoccurrence. Consequences which satisfy some need in an individual increase the probability of reoccurrence of the behavior which immediately preceded it. Non-biologically based behaviors are established in people because these behaviors, in the past, have been followed by favorable consequences; favorable in the sense they have satisfied needs. Thus, man is basically selfish. He behaves in a way that satisfies the greatest amount of need. Dale Carnegie attunes himself to this part

of man's nature and shows people how to use it to their advantage in his bestseller How to Win Friends and Influence People. Carnegie's guiding principle is that by assuaging a person's yearning for importance and self-esteem one can manipulate him like a puppet.<sup>4</sup>

The father who works and saves for the future well-being of his family, even though he will die before seeing the results of his labor, has been reinforced in the past for exhibiting this attitude; or, in other words, his inculcating this attitude has been dependent upon the favorable consequences which followed the attitude's behavioral manifestations. He has been taught to think this is proper behavior for a father, and his conscience would plague him if he failed this obligation. Is he not, then, caring for his family because he needs to care for his family, because he has learned this is the right thing to do; keeping in mind that acquiring behavior through learning is dependent upon satisfaction of needs, and if behavior were eliminated without any new behavior taking its place, the satisfaction of needs associated with that behavior would also be eliminated and the needs would arise anew. Thus man seems to be motivated in such a way that he acts to satisfy his needs, be they learned or inherited.

According to Putney and Putney in their book Normal Neurosis, The Adjusted American, the marriage relationship in America is based on reciprocal satisfaction of needs, with this satisfaction primarily achieved through the mechanism of projection.<sup>5</sup> When one alienates some quality or potential which he would like to experience in himself, but does not, he projects it onto someone else, where he loves it.<sup>6</sup>

The people he loves, like those he hates, are merely convenient targets for his projections.

It may seem curious that anyone would alienate potentialities he longs to experience in himself, but there are several reasons why people do. Often the individual alienates qualities that seem contradictory to his fundamental self-image. He may regard these qualities as desirable in abstract, but as inappropriate for himself.<sup>7</sup>

That part of our socialization process which encourages males to be "manly" (aggressive, self-assertive, proficient in sports and mechanics), and females to be "feminine" (dependent, vain, impractical, demonstrative) also alienates people from experiencing capacities associated in our society with the opposite sex, but capacities which people have, nonetheless, regardless of sex.<sup>8</sup> "Another reason for alienating and projecting valued facets of the self is that a person may become falsely convinced that he lacks some quality which he considers desirable."<sup>9</sup> This quality "...may remain inaccessible to him throughout his life. If so, he will experience it only via projection on others..."<sup>10</sup>

Thus "the subsequent search for the ideal mate is in reality a quest for the alienated but desired facets of the self which have

been shaped into the idealized image."<sup>11</sup> A person hangs this image on someone and loves it. Putney and Putney capsulize this process in the following passage.

What happens, in essence, is that one person projects some part of himself which he values highly onto someone else, where he adores it. He then begins to act as if this person were an extension of himself. Longing to enjoy the misplaced part of himself, he clings to the person on whom he has projected it, he is possessive and jealous, he delights in the loved one's presence, but feels anxious and incomplete when this person is absent.<sup>12</sup>

Literature is replete with evidence supporting Putney and Putney's claim that mutual satisfaction of needs lies at the heart of the marriage relationship. Ingrid Bengis comments in Combat in the Ero-genous Zone, "Since we are all limited human beings, we try to sat-isfy as many needs as possible in one person..."<sup>13</sup> In John Updike's Couples, the following exchange takes place between Piet and Foxy: (Piet) "Do men get used? They just use." (Foxy) "Oh, you're so wrong. We use you all the time. It's all we know how to do."<sup>14</sup> Alex Portnoy, in Roth's novel Portnoy's Complaint, thinks, "For love? What love? Is that what binds all these couples we know together--the ones who even bother to let themselves be bound? Isn't it something more like weakness?"<sup>15</sup>

The need for marriage, or a relatively permanent pair relationship between members of the opposite sex, also seems to be biologically based in man's evolutionary history and has only recently, in parts of the world, been unnecessary for the survival of the race. Desmond Morris, in The Naked Ape, theorizes about man's ancestors.

Because of the extremely long period of desdependency of the young and the heavy demands made by them, the females found themselves almost perpetually confined to the home base....The hunting parties, unlike those of the 'pure' carnivores, had to become all-male groups....For a virile primate male to go off on a feeding trip and leave his females unprotected from the advances of any other males that might happen to come by, was unheard of.<sup>16</sup>

In adapting to this new complexity, the development of a new social behavior, the pair-bond relationship, was begun. This new behavior solved three problems at once. Now, "females remained bonded to their individual males and faithful to them while they were away on the hunt"<sup>17</sup>, "serious sexual rivalries between the males were reduced"<sup>18</sup>, and "...the development of a one-male-one-female breeding unit meant the offspring also benefitted."<sup>19</sup>

Morris suggests these were "basic biological changes rather than mere cultural ones, and that the new species changed genetically in this way."<sup>20</sup> Thus, behavior resulting in permanent male-female relationships gained survival value and was passed on to future generations.

The sex drive was, and is, necessary for man's survival and constitutes another biological factor in the marriage relationship. In Couples, Piet illustrates the importance of sex when he thinks, "Ass. His mind plunged unresisted into this truth: nothing matters but ass. Nothing is so good."<sup>21</sup> The sex drive can be satisfied with more security and regularity within the bounds of a permanent pair relationship, and although sex alone can motivate permanent relationships, permanent at least until the time one of the partners loses attractiveness, it is usually not enough. Ingrid Bengis expresses this sentiment when she says, "What I wanted was--yes, sex--but sex with love, sex that expressed something more than just biology."<sup>22</sup> "When the sexual drive is exhausted, all that remained was a sense of gap between sex and love."<sup>23</sup>

We have seen that man acts to satisfy his needs, and how this concept applies to the dynamics of marriage. There are various ways of satisfying needs, however, with some ways benefitting society, or other people, more than other ways. One can satisfy aggressive urges by standing on a street corner and tripping people as they walk by, or he can participate in sports, debate, or other activities which allow for controlled aggression in a manner which threatens people less and allows society to proceed in smoother fashion. One can satisfy his need to feel worthwhile by being kind, empathetic, and generous to others, or by being domineering and demanding. According to Erich Fromm in The Art of Loving, one's deepest need is "...the need to overcome his separateness, to leave the prison of his aloneness."<sup>24</sup> One can satisfy this need by giving of himself to others and "in giving of your totality you enrich the other person--you enhance the other's sense of aliveness by enhancing your own sense of aliveness."<sup>25</sup> To satisfy this need for interpersonal fusion, we can cultivate a caring, responsible, respectful, and knowledgeable orientation to others. On the other hand, by sacrificing any sense of personal integrity we can totally immerse ourselves in dependency on another person; or, at the other extreme, assume unlimited control and power over another's life.<sup>26</sup>

Another way to classify need satisfaction into socially desirable and socially undesirable components is by considering the source of satisfaction. Fromm says, "Love is not primarily a relationship to a specific person, it is an attitude, an orientation of character."<sup>27</sup> Thus we can satisfy our needs with only a few persons or things, or we can develop a general mode of interaction with others which accomplishes the same end.

One prerequisite for developing a loving orientation of character is identification with others. In Stephen Crane's short story, "The Open Boat", a correspondent, trapped with three companions in a small boat, was reflecting on their situation. They had come so far, experienced much suffering, and now they seemed fated to die; dashed upon the waves of a merciless beach. It did not seem fair to have come so far only to be drowned. It occurred to him that nature does not regard him, or any man, as important. The other men in the boat, he knew, were thinking these same thoughts in their own way. A long forgotten verse entered his mind about a soldier who lay dying in

Algiers. He remembered that he had never regarded this soldier's plight as important. "He had never considered it his affair that a soldier of the Legion lay dying in Algiers, nor had it appeared to him as a matter for sorrow."<sup>28</sup> But "now, however, it quaintly came to him as a human living thing...it was an actuality--stern, mournful, and fine.... He was sorry for the soldier of the Legion who lay dying in Algiers."<sup>29</sup> The correspondent recognized that all men are "in the same boat", that all men suffer and die, and this gave him a common bond which allowed him to relate to everyone, and not just to a few, in a way which satisfied his need for interpersonal union.

Achieving interpersonal union and giving love to ever changing people often seems so difficult that men direct their concerns toward relatively stable objects and events, with the hope of attaining a more secure relationship. Such is the case with Reverend Hightower and Percy Grimm in William Faulkner's novel Light in August. Reverend Hightower focused his love on his grandfather's Civil War calvary exploits, and he could never get beyond them.<sup>30</sup> His interactions and effectiveness with others were impoverished as a result. Percy Grimm's love was centered in an object, the military uniform, and a concept, nationalism. This is clearly illustrated in the following passage:

Then suddenly his (Grimm) life opened definite and clear....He could now see his life opening before him, uncomplex and inescapable as a barren corridor, completely freed now of ever to think or decide, the burden which he now assumed and carried as bright and weightless and martial as his insignatory brass: a sublime and implicit faith in physical courage and blind obedience, and a belief that the white race is superior to any and all other races and that the American uniform is superior to all men, and that all would ever be required of him in payment for this belief, this privilege, would be his own life.<sup>31</sup>

Everyone needs meaning in life, but the scope of one's life becomes narrowed and barren if meaning is restricted to a single object, event, or even person.

Some say love can be independent of need and deserving of Lewis's designation as Gift-love. O. Karrer, in his essay "Sex, Eros, Love" says:

Neither sexuality nor eros will make human beings perfect unless agape, divine love, heals the human frailties in both; for both by nature are subject to self-love and this degenerates into selfishness if it is not corrected by the fear of God....'God is love' (1 John 4:8) and it is his nature to communicate his goodness. The 'God of love' (2 Cor. 13:11) loves 'freely' (Rom. 3:24) and 'you yourselves have learned from God to love one another' (1 Thess. 4:9), to love without asking why and without thinking of self-advance-

ment and enrichment.<sup>32</sup>

C. S. Lewis also believes unselfish love is possible through heavenly intervention by a Creator God. He echoes Karrer's allusion that "God is love,"<sup>33</sup> yet refrains from describing a feeling of Appreciative-love for his God, for he may "...have only imagined the tasting."<sup>34</sup> He thinks he may have only dreamed of sensations attributable to Appreciative-love for God, yet feels so assured of the reality that Gift-love and his God are inextricably bound. How can a loving God create a world in which life advances by the maxim "survival of the fittest", in which natural catastrophes wipe out thousands, and in which so much physical and moral suffering exist. In Couples, Freddy exemplifies the hopeless attitude our world often fosters when he says, "you're born to get laid and die, and the sooner, the better."<sup>35</sup> Jake Horner, in John Barth's The End of the Road, sits on a bench in a train station for hours, not intending to move unless he has a reason to move.<sup>36</sup> His life is so meaningless and empty it has forced him to immobility. Philosophical discourses expousing the existence of an omnipotent, omniscient, and omnibenevolent God, even though evil exists in the world are unconvincing.

If, as we have discussed, man is naturally selfish, selfish in that much of his behavior and actions have been learned through reinforcement, a process which involves satisfaction of needs; it does not seem fair, as is often done, to attach negative connotations to this part of man's nature over which he has no control. We realize, however, that need satisfaction can be accomplished in a variety of ways, some benefitting mankind as well as oneself, and some benefitting only oneself; and that we should strive to satisfy our needs in a manner which is congruent with the first alternative. In attempting to overcome man's pervasive sense of aloneness, we can try to identify with and relate to all people in such a way that we give of ourselves and experience active concern for others' well-being, or we can restrict our need satisfaction to one person or thing, and damn the rest of humanity.

A question one needs to ask is, if all non-biologically determined behavior is learned through past and present reinforcement contingencies, do not a man's past experiences shape his present behavior, thus leaving him no choice in what he thinks or feels? Even though this be true, those people who have learned to satisfy their needs by giving to others should teach this behavior to those who have learned more unproductive patterns of need satisfaction. People can also shape, or teach themselves to act in a given way, if reinforced for doing so.

Perhaps after considering reality's vast and indefinable nature it is best to choose an orientation toward life which feels most comfortable. It is certainly possible that Gift-love does exist and does come from God. W. D. Norwood, in his book The Judoka, says:

I am not arguing that one can disregard what is and pretend that the world is what one would like it to be...  
I am saying that one does not know what the world is; and



that only when there is no compelling reason to prefer a non-mythic view to a mythic one, a person is better off choosing the latter.<sup>37</sup>

Even though one feel compelled to adopt a non-mythic world view, he can hope and be open to the possibility that Gift-love exists and that maybe someday the shroud will lift from his eyes and he will recognize it, but until then he must interact with the world on the terms it presents him.

FOOTNOTES

<sup>1</sup>James Taylor, "Long Ago and Far Away"

<sup>2</sup>C. S. Lewis, The Four Loves (New York: Harcourt Brace Jovanich, Inc., 1960).

<sup>3</sup>Ibid.

<sup>4</sup>Dale Carnegie, How to Win Friends and Influence People (New York: Simon and Schuster, 1964).

<sup>5</sup>S. Putney and G. J. Putney, Normal Neurosis, The Adjusted American (New York: Harper & Row, Publishers, 1964) p. 109.

<sup>6</sup>Ibid.

<sup>7</sup>Ibid. pp. 109-110.

<sup>8</sup>Ibid. pp. 110-111.

<sup>9</sup>Ibid. p. 111.

<sup>10</sup>Ibid. p. 112.

<sup>11</sup>Ibid.

<sup>12</sup>Ibid. p. 127.

<sup>13</sup>Ingrid Bengis, Combat in the Erogenous Zone (New York: Bantam Book, Inc., 1972) p. 201.

<sup>14</sup>John Updike, Couples (Conn.: Fawcett Publications Inc., 1968) p. 211.

<sup>15</sup>Phillip Roth, Portnoy's Complaint (New York: Bantam Books Inc., 1967) p. 117.

<sup>16</sup>Desmond Morris, The Naked Ape (New York: Dell Publishing Co., Inc., 1967) pp. 32-33.

<sup>17</sup>Ibid. p. 33.

<sup>18</sup>Ibid.

<sup>19</sup>Ibid.

<sup>20</sup>Ibid. p. 34.

- <sup>21</sup>Updike, p. 253.
- <sup>22</sup>Bengis, p. 187.
- <sup>23</sup>Ibid. p. 190.
- <sup>24</sup>Erich Fromm, The Art of Loving (New York: Harper & Row Publishers, 1956) p. 9.
- <sup>25</sup>Ibid. p. 23.
- <sup>26</sup>Ibid. pp. 18-20.
- <sup>27</sup>Ibid. p. 46.
- <sup>28</sup>Stephen Crane, "The Open Boat", American Prose and Poetry ed. N. Foerster, N. S. Grabo, R. B. Nye, E. F. Carlisle, and R. Falk, 5th ed., Part 2. (Boston: Houghton Mifflin Company, 1970) p. 1037.
- <sup>29</sup>Ibid. pp. 28-29.
- <sup>30</sup>William Faulkner, Light in August (New York: Random House, Inc., 1932) pp. 52-70.
- <sup>31</sup>Ibid. p. 426.
- <sup>32</sup>O. Karrer, "Sex, Eros, Love", Sex, Love, Marriage ed. F. X. von Hornstein and A. Fuller, (New York: Herder and Herder, 1964) p. 2.
- <sup>33</sup>Lewis, p. 175.
- <sup>34</sup>Ibid. p. 192.
- <sup>35</sup>Updike, p. 255.
- <sup>36</sup>John Barth, The End of the Road (New York: Bantam Books, Inc., 1967) p. 74.
- <sup>37</sup>W. D. Norwood, The Judoka (New York: Alfred A. Knopf, 1973) p. 116.

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SISTERHOOD  
by  
Kathy Gibson

I am a feminist. To me, being a feminist means becoming all that I can be as a person, as a woman. It means striving toward self-actualization, in the words of Abraham Maslow. Feminism enters into this process because, as a woman, there are those who would prevent me from becoming a person, and it is sometimes necessary to fight to become what I should naturally be.

I think the hardest part of becoming liberated is realizing that you aren't already. Josef Pieper said that the day may come when the oppressed do not even know that they are oppressed. I think that this is the case of most women. From the time we are children, we are made to feel inferior, or at least different, and we grow up not realizing that this is wrong. It takes a tremendous self-awakening to become aware of the injustice which we have been taking for granted.

Lately, I have been looking back through my life trying to pinpoint the changes (and their causes) that brought about this awakening in myself. During my high school years, at least at first, I was as disdainful of women's lib as the rest of my classmates. Our image of women's lib was distorted to say the least. We were ignorant of the real causes and goals of the women's movement. We knew only of the "bra-burners" who wanted to be like men or better than men. I guess that lesbianism was in the backs of our minds. This is not to say that we thought women inferior or even that "a woman's place is in the home". It's just that we were so misinformed about the women's movement that we failed to realize that their causes were our own. We accepted the proposition that women were different. Thus it followed that women should not do certain kinds of work, or serve in the armed forces, or dress like men. "I think women should get equal pay for equal work, but I'm not for women's lib", was a common statement. What we did not realize was that not only did women not get equal pay, but that they seldom had a chance to obtain equal employment anyway.

I think part of the fault for our attitudes, which more closely resembled apathy, was in the atmosphere of the high school itself. Instead of being taught to think for ourselves, or even allowed to do this, we were handed the wisdom of the teaching staff whose knowledge we were not allowed to question. Along with this knowledge we were passed the norms of the community, which were again accepted unquestioningly. These norms included the views of invariably chauvinistic males and women who were made to feel guilty for working by the feminine mystique and tried to compensate by making us believe that teaching (and few other occupations) were acceptable for women.

This close-mindedness on the part of the teaching staff is one of the major handicaps of our school systems. The purpose of teachers is (or should be) to help students, both male and female, to develop into full, creative, thinking adults, not to indoctrinate them with social principles which soon become oppressive when they try to grow.

Part of the fault lies simply in the fact that we were part of a small town resistant to change, however insignificant. While the mini-skirt became popular in the late-sixties throughout the country, it was well into the seventies before our small town even realized it. Social norms and attitudes are even harder to change. Although Betty Friedan exploded the feminine mystique in the 1960's, I venture to say it will be quite some time yet before the explosion is felt in my hometown.

Another reason for our attitudes was that we were going through adolescence, a time when boys and dates were all important. It was important to us to be attractive to the opposite sex and women's libbers certainly were not. This attractiveness was demonstrated to us when we had dates or were whistled at or (most of all) when we went steady. Most of us went steady. I remember the mixed feelings I had even then when someone whistled at me. During this time, however, I read in a question-and-answer column a letter from a girl, asking what was the proper response when someone whistled at you. The answer: smile at him to thank him for the compliment. I did not realize then that there are more important and essential ways for me to be complimented. Now I boil when some male chauvinist pig whistles at me; then I smiled. When did I change?

Undoubtedly, part of the change in myself occurred when I decided to change careers. All of my life I had wanted to be a teacher. Now I found that there was no future in teaching, that most likely I could not find a job, and even if I could, I would be underpaid. So I searched for something new that would interest me. This search took place during my senior year in high school. I finally decided to be a lawyer. Our school guidance counselor was very helpful to me. He lent me a bulletin of the University of Louisville College of Law printed sometime around 1965. That's all. I think he was disappointed that I had not decided to become a psychologist.

He really did not disapprove of my choice, however. Others did. So often I am asked, "Couldn't you be a nurse or a teacher or something?" "Something more feminine?" I respond. "Yes, that's it," they say eagerly. Why is it so incomprehensible to others that I may actually want to be a lawyer, that I think I will make a good one, that I would not be satisfied with something less? Worse of all, no one thinks that I will make it. Only my husband really has confidence in me. "How much longer do you have?" they ask. "Five years!" Do you think you can stick to it that long?" Why not, I ask myself. Are women supposedly less determined than men? They cite the fact that I have a husband and a child to take care of. But don't men with families make it through law school or med school or earn their PhD.? Then why can't a woman?

It was these subtle and not-so-subtle discriminations toward me simply because I was a woman that led me to adopt a feminist attitude, mainly out of self-defense.

Another factor of major importance that led to my self-identification as a feminist was in the reading I did. During the summer after high school I read constantly, mostly magazines. It was during this time that I learned the most about the women's movement. I think the article that had the greatest effect on me was one in Redbook, "Women's Lib? I've Seen It on TV." This article was the report of a woman traveling across the U.S. asking women how they felt about women's lib. It contained actual interviews with these women. By reading what they said and also what the women's movement really stood for, I found that what I had in effect been saying was, "I believe in everything that women's lib stands for, but I'm not for women's lib." This article made me realize how contradictory that was. In a sense, it was my desire to do and be something different from what was accepted that created a need, and the reading I did that helped me realize that need--the need for equality and an opportunity to be all that I could be. During the past two years I have continued to read feminist literature and my eyes have opened to subtle discriminations that I had never realized were discriminations.

During the past two years, I have changed more than ever before. Some of it is undoubtedly growing up, but I still have the feeling that this growth would not have been entirely possible had I not become aware of the ways people have of "keeping me in my place." I guess I have become an "uppity female." I used to be very shy and would never openly disagree with anyone. Now I find myself probing people, looking for their hidden prejudices. And when someone says something chauvinistic to me, I respond. Maybe I only succeed in building up resentment toward me in them, but that is preferable (to me) to keeping resentments within myself which I have a legitimate right to express.

Liberation is a gradual process. First, we become aware of the prejudices which we face without knowing how to fight them. Then, slowly, we develop our methods of fighting back. For me, it has been crucial that I learn to stand for myself and defend my views. While I may not change anyone else's ideas, it is important that I at least express my own. And who knows, it may help to make others more aware of our problems.

The most depressing fact about sexual discrimination is that it is so widespread. It seems that no one can be truly un-sexist. When I went to see my pre-law advisor and he found out I was married, he gave me a lecture on how important it was that my husband go to school too, or we might drift apart. I realized the value of what he was telling me, but later, when I had had time to think, I wondered if he counseled his male pre-law students who are married in the same way. Did he consider the wife's fulfillment of ambitions as important as a husband's? Somehow, I doubt it.

For some time I have had the feeling that male chauvinism has

gone underground. After reading Ingrid Bengis' book, Combat in the Erogeous Zone, I feel almost certain of it. Her experience parallels mine in dealing with self-styled liberals who try to present an unsexist front because this is "in" for liberals. Perhaps I have become rather paranoid about sexism, but after so many times of hearing a man talk so "understandingly" about women and then saying something so appalling chauvinistic, it's hard not to be suspicious.

It is this subtle, hard-to-uncover sexism that is so difficult to deal with. I would much rather a man be truthful about his feelings than to hide them. At least then we can discuss them, and perhaps come to some understanding. But when a man will not admit that he feels ambivalent or even hostile toward women, what can you do? Unless he brings his sexism out in front of me, I can do nothing. And it is what he does behind my back that bothers me. It is this type of man, I believe, that professes to support the women's movement on one hand, and on the other, (unknown to me) does a great deal to perpetuate the feminine mystique.

Another problem a feminist faces is other women. Unliberated, unambitious themselves, they do not want anyone else to be better off. I agree with the statement that "women's biggest enemy is women." As long as the men in control can point to "contented" unliberated housewives who have no interests other than their families, and say that is normal, and we who are trying to become all that we can be are abnormalities, we will have an uphill battle to fight.

With all the problems which I myself face in trying to deal with sexism, I feel that as a person, I have gained a great deal. A woman who accepts unquestioningly the traditional ideas of womanhood undoubtedly loses a sense of herself as a person. But when she fights back against the barriers which these ideas set up, she invariably gains back some of her personhood. I feel myself more of a person since I have learned to fight back. With the winning of each small battle toward liberation, I feel myself more worthy of complete liberation. I have within me capabilities and capacities which need to be fulfilled, and I have a right to have them fulfilled and to be able to experience life to the fullest. Every person has.

As Abraham Maslow said, "We have, all of us, an impulse to improve ourselves, an impulse toward actualizing more of our potentialities." When we're blocked from becoming what we should be, as most women are, we become stunted, neurotic, only partly human. Maslow and Frieden have both demonstrated this. To me, feminism means fighting to avoid this diminution of our humanness. It means fighting to stay human.



THE INFLUENCE OF LITERARY FIGURES  
UPON THOMAS MERTON

by  
Michael Castlen

Thomas Merton was born January 31, 1915, in Prades, France, in the Pyrenees Mountains near the Spanish border. His parents were artists. His father, being Christian, had Thomas baptized at an early age. His mother occasionally attended the Quaker church, but refused young Thomas church in an effort to cause him to "think for himself."<sup>1</sup> She died while he was young, and thus he began his search for meaning. Although late, he began attending the Church of England regularly; with the death of his father when Thomas was seventeen, Merton lost his faith. He then became a worldly man, very much interested in material goods and suffered great tension. In order to throw off this tension, man may turn toward the appetitive instincts or elect a more ethical behavior. Merton chose the former. He used literature and language to fill the void he was now feeling. He was especially interested in William Blake, T. S. Eliot, D. H. Lawrence, Ernest Hemingway, Gerald Manley Hopkins and James Joyce.<sup>2</sup>

In his beginning readings of the early poetry of William Blake, Merton took a turn toward the spiritual, and even that was touch and go. Blake wrote in such a way as to appeal to the romanticist in Merton. Merton could relate to the rebellion that was in Blake's writing, for Merton was in the midst of protesting everything from capitalism to miracles. Merton later believed it was the "Grace of God"<sup>3</sup> that brought him around to Blake's writings. At this time, Merton began seeing through the meaninglessness of contemporary society of which he was so drastically a part. Here, Blake pointed the direction of Merton's protest and gave the impetus for Merton to go his own way. Blake was not a writer of contemporary thought, but he was an individualist, possibly prophetic. As a child, Merton read Blake and would discuss Blake's writings and art with his father. As a boy, Merton did not grasp the full meaning of Blake's writings. He was most impressed with Blake's "antipathy toward false piety and religiosity, the scandals of Anglican faith," which Merton was in the process of condemning, and with Blake's admiration for the "man who genuinely loves God."<sup>4</sup>

After Merton entered his freshman year of college at Cambridge University, he speaks of reading D. H. Lawrence's Fantasia of the Unconscious, a book concerning psychoanalysis. This gave him a certain philosophy of life and a pseudo-religion which he later said was "nearly the end of me altogether."<sup>5</sup> His freshman year proved to be a disappointment. Discouraged, he moved to New York to live with his grandparents.

His grandfather was interested in Lawrence, but basically for a

different reason. He was a doctor and felt the need to provide an atmosphere of respectability. In other words, Merton's grandfather thought that a man ought to live a morally good life, but only in connection with what is socially proper.<sup>6</sup> Merton's grandfather based his belief on propriety rather than an ethical consideration. It would be later before Merton would realize Lawrence's deeper meaning.

Merton then entered Columbia University but became sick with blood poisoning. Here, in his leisure, he wrote an essay on the "Modern Novel"; one of such was Hemingway's, which won Merton the Bailey English Prize.<sup>7</sup> While in the hospital, he was given a book of poems, written by a Catholic Jesuit priest named Gerald Manley Hopkins. Merton was still a little skeptical of Catholics, but accepted the author with "reservations."<sup>8</sup> He did not read Hopkins again for several years.

During his undergraduate years, he also began reading the works of T. S. Eliot. Eliot was a rebel artist, and with this Merton could easily relate. He related so well, in fact, that he sold his essays of Eliot to the Columbia bookstore in a "conscious reaction against artiness."<sup>9</sup>

In 1938, Merton graduated with an English degree and began work on his master thesis. He had chosen for his topic: "Nature and Art in William Blake."<sup>10</sup> This would include Blake's poetry and some aspect of his religious ideas. While doing this thesis, Merton's life was pointed in the direction of Christianity. He had changed from the athiest, which he believed himself to be, to beginning to understand concepts of God and Christianity. He did not just understand this intellectually, but began to desire it. By the end of his thesis, his religious life was made a certainty. He began attending church regularly and finding the philosophy and meaning he had been searching after. All the influences of his undergraduate years began pulling together after completion of his master's degree, which led to his final conversion. Merton later said of Blake:

The Providence of God was eventually to use Blake to awaken something of faith and love in my soul....I do not, therefore, want to caconize him. But I have to acknowledge my own debt to him...that through Blake I would one day come in a round-about way, to the only true Church and to the One Living God, through His Son Jesus Christ.<sup>11</sup>

In 1939, he finished his master's and began work on his doctorate degree, planning his dissertation on Gerald Manley Hopkins. While reading Hopkins, he was not persuaded in any new direction, although Hopkin's writings had steered Merton away from Jesuits, a religious community he thought considerably of at one time. While doing research on Hopkins, he wrote a poem called "Fable of War". For this,<sup>12</sup> he recieved the Marian Griswald van Renasehaer Annual Poetry Prize. Just before completion of his doctorate degree, he entered the Trappist Monastery of Our Lady of Gethsemani near Bardstown, Kentucky, on December 19. 1941.

After being in the monastery for six years, he was made master of novices. Subsequently, he used the philosophy of William Faulkner in teaching the novice monks. In his discussions, which were limited to the novices, and were later opened up for the entire monastic community, he explored literary themes. Merton had studied Faulkner for many years and thought of writing a book on him. Merton later resigned as master of novices in August, 1965, to become a hermit. In his hermitage, Merton held an interview with Thomas P. McDonnell on the subject of Faulkner.<sup>13</sup>

Faulkner, he said, asked questions of Christian reality in a more subtle, concrete way than he himself.<sup>14</sup> In discussion of Faulkner's "The Bear", Merton saw himself as the protagonist, Ike, who made a sort of "monastic renunciation"<sup>15</sup> when he gave up his land in the South, out of protest. The land stood for the supportment of slavery and making money and destroying nature.

It was in these latter years that Merton's own writings reflected the influences of James Joyce. Joyce's writings frequently reflected his Catholic background in Dublin and showed he was influenced by St. Thomas. It was this and Joyce's knowledge of the history of the Church which so fascinated Merton.<sup>16</sup> Joyce created a mythological system in which he replaced heaven when he was convinced there was none. Through history he saw a cyclical reoccurrence that might hint at an eternity. Merton also devised his own system of suggestion, stimulated by Claude Levi-Strauss' anthropological "likeness."<sup>17</sup> This likeness or universality in man is then put into a theological context by Merton and inferred as the soul.

Merton's writing was similar to Joyce's. This similarity is found in Merton's punning. He used the same type coinages, linkings, word blends, sound gradations and witty condensations as Joyce did. Joyce's influence is shown in Merton's parodies of English literature and his parodies of prayer exemplified in his complicated book of poetry, Geography of Logriere, "The saints deserve us." Also, his parodies of words found in the phrases, "Body is truth, truth body" and "fat is all you know" found in Selected Poems of Thomas Merton, reflect a Joycean influence.<sup>18</sup> They both had a fascination for advertising. Merton would use headline captions to capture the reader's attention and then go on to work in what he had to say. This, along with his poetry, reflected his tremendous intellect. A final similarity was the relative ease with which they turned from the outer to the inner world. This style renders a sense impression directly as it falls upon the mind and gives rise to a chain of associations within the mind. No direct indications are made between the shifts from outer to inner.<sup>19</sup>

And so it is obvious that these literary figures, all of whom were twentieth-century writers, except for Blake, who was an eighteenth-century writer, played a decisive role in the life of Thomas Merton. His life was influenced in many ways at many times by each of these writers, starting from his early adolescence, to the time of his death in Bangkok, Thailand, on December 10, 1968, where he was speaking at an international monastic seminar.

FOOTNOTES

<sup>1</sup>Thomas Merton, The Seven Story Mountain (New York: New Directions Publishing Corporation, 1967) p. 16.

<sup>2</sup>James Baker, Thomas Merton, Social Critic (Lexington: The University Press of Kentucky, 1971) p. 4.

<sup>3</sup>Merton, p. 89.

<sup>4</sup>Baker, p. 4.

<sup>5</sup>Merton, p. 105.

<sup>6</sup>Ibid. p. 80.

<sup>7</sup>Ibid. p. 103.

<sup>8</sup>Ibid.

<sup>9</sup>James Y. Holloway, "Faulkner Meditations: The Wild Palms", Katallagete, 5 (1975) p. 3.

<sup>10</sup>Holloway, p. 4.

<sup>11</sup>Merton, p. 91.

<sup>12</sup>Ibid. p. 103.

<sup>13</sup>Thomas P. McDonnell, "An Interview with Thomas Merton", Motive, 23 (October 1967) p. 32.

<sup>14</sup>Ibid. p. 35.

<sup>15</sup>Holloway, p. 4.

<sup>16</sup>Notes taken from Dr. James Wayne Miller at Western Kentucky University (February 6, 1976).

<sup>17</sup>Ibid.

<sup>18</sup>Thomas Merton, Selected Poems of Thomas Merton (New York: New Directions Publishing Corporation, 1967).

<sup>19</sup>Interview with Dr. James Wayne Miller at Western Kentucky University (February 6, 1976).

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SCIENCE AND FAITH: AN ESSAY SURVEYING  
THE EFFECTS OF SCIENCE ON VICTORIAN WRITERS

by  
Daniel E. Davis

The Victorians experience a profound alteration of faith due to the revelations of scientific thought and theory. Science in the 19th century made terrific gains, especially the geological and anthropological fields, and many discoveries seemed to refute the beliefs of traditional Christianity. That the earth was only about 6000 years old, as Bishop Usher had calculated from the Bible, was proved false by geological dating strata in exposed cliff faces which showed that the earth was, in fact, billions of years old. Darwin's theories of evolution demonstrated that human beings had inhabited the earth for thousands of years and suggested that man had evolved from lower animal forms which had in turn evolved from still lower animal form all of which shook the belief that man is a divine creation made in the image of God. As time was multiplied dramatically, so also was distance. Where once man believed the earth to be at the center of a tight, well-defined universe, Victorian thinkers were beginning to realize the dizzying expanse of a universe where earth is a tiny, seemingly casual, and insignificant component. With the loss of faith, Victorian writers such as Carlyle and Matthew Arnold sought to find other sources to root themselves while some, like Clough and Swinburne, wrote despairing cynical verses and Tennyson clung in stubborn desperation to the beleaguered faith.

Arnold had begun to feel that Christian faith was no longer tenable in the light of science's new discoveries, as he intimates in Stanzas from the Grand Chartreuse: "For rigorous teachers siezed my youth,/ And purged its faith, and trimmed its fire" (ll. 68, 69). With loss of faith comes the inevitable emptiness, or perhaps, loneliness which Arnold felt when he is alienated from the personal God earlier men had enjoyed. Arnold's elegiac poem, "Dover Beach", is an important statement concerning the desolation resulting from the "melancholy, long withdrawing roar" of faith from the Victorian mind. This loss of faith took with it all meaning from man's actions, leaving the poet to feel lost "as on a darkling plain/ Swept with confused alarms of struggle and flight,/ Where ignorant armies clash by night" (ll. 35-37). But Arnold, like Thomas Carlyle, felt that a new kind of man would come to replace the old, and for Arnold this meant a man equipped with a philosophical mind well-read of the best things, said and written. In his book The Function of Criticism at the Present Time, Arnold suggests that the political sphere of ideas could not hope to mend the spiritual rift opened by science, by creating liberal legislation unless the deeper moral issues were faced and resolved. And although applied science had brought freedom from drudgery to many, Arnold is aware that society can decay as rapidly from spiritual aridness as from physical oppression. In Culture and Anarchy he warns of

the danger in replacing God with a new idol--machines.

Carlyle, too, saw his age in a moral crisis and although he was perhaps more concerned with the social evils of his time (as in Past and Present), he also strove to return his age to a spiritual unity once provided by Christianity. Ironically, Carlyle (like other Victorians such as Browning and Meredith) turned to the very theory that had helped undermine Christianity in forming a new ideal, the theory of evolution. Carlyle, then, believes that man's purposelessness can be averted by seeing man as struggling toward a spiritual unity in an organic evolutionary process and Carlyle suggests ways to assist this process in Sartas Resartos. George Meredith dwelt on this theme in his poetry, seeing the spirit as evolving within man and returning him ever closer to God. For Meredith, man had purpose and meaning in striving to make better gifts that God had given him on earth (Hardy's amelioration) as his poem "The World Advances" explains. Robert Browning also explores the theme of man as a primitive life form at work to sublimate his species in Calibar upon Setabos, as the half-man, half-monster Caliban thinks of his relation to God and the lower animal forms.

But not all writers restructured their thought under the bright light of scientific discovery. Alfred Lord Tennyson presented a quite different solution, a solution that appealed to many Victorian people who were eager to have their faith articulated. In In Memorium, Tennyson writes of his own crisis of faith at the death of his beloved friend Arthur Hallam and also of the crisis of faith created by science. In sections 54, 55, and 56, Tennyson faces the new facts and reveals how, if accepted, they will cause one to despair. Nature is described in light of Darwin's theories as cold and indifferent, "read in tooth and claw." And Darwin's nature says of the species man: "From scarp'd cliff and quarried stone (the geological data)/ A thousand types are gone;/ I care for nothing, all shall go." Tennyson, however, turns back to his faith, preferring to use love and intuition as his proof rather than science and trusting "that somehow good/ Will be the final goal of ill." He also reasserts God's personal involvement with man, thus hoping to respond to the nihilistic emptiness that he sees in a world without God at its center:

Still onward winds the dreary way;  
I with it, for I long to prove  
No lapse of moons can canker Love,  
Whatever fickle tongues may say.

O, if indeed that eye forsee  
or see in Him is no before--

\*\*\*\*\*

Then might I find...  
That Shadow waiting with the keys,  
To shroud me from my proper scorn.

(ll. 5-10

ll. 12-16)

Another pair of poets, Arthur Hugh Clough and Algernon Charles Swinburne reacted to the Victorian dilemma of shattered faith with a cynical world view that in many ways mocks true believers. Clough, in The Latest Decalouge, gives a scathing rendition of the Ten Commandments in which all of the pettiness of man is explored. Even more cynical is Swinburne's "The Garden of Proserpine". Although, like Clough, he does not specifically allude to science, one feels that the struggle to live in an emerging world of grim, merciless facts contributed to the world-weariness that causes him to write, "We thank with brief thanksgiving/ Whatever gods may be/ That no life lives forever;.../ that even the weariest river/ Winds somewhere safe to sea."

Where did man come from and where was he headed? Once Christian faith provided answers to both questions, but to the Victorians, science was rapidly rendering Christianity obsolete. So the poets sought, even as modern thinkers seek, a way to integrate what had been newly learned into their lives without destroying their very souls. And like Clough, they struggled to resist despair and "(said) not the struggle naught availety."



THE URANTIA BOOK:  
NOT JUST A REVIVAL OF GNOSTICISM  
by  
Patty Smith

In the beginning there was Depth. Of its contemplation was born Silence. From the union of these two entities was born a third, named Horus, who was knowing of his parentage. By nature he sought to retain the order of the coming creation by preventing the persons of his own emanation from seeking knowledge of the father Depth, lest they fall into the emptiness of both Depth and Silence. Horus, through further emanations, produced the Pleroma consisting of fifteen pairs of Aeons, or thirty in all. The youngest Aeon, Sophia, being the weakest, sought forbidden knowledge of the father and attempted (in imitation of Horus) to create without the aid of her partner. Catastrophe resulted from this impulsive act, and thus material existence came into being from the formless substance which Sophia aborted.<sup>1</sup>

So goes the beginning of the creation story according to the Valentinian system of Gnosticism in the 2nd century A. D. The story continues with the material substance (called Achamoth) being cast out of the Pleroma in order to redeem Sophia, followed by the subsequent redemption of Achamoth, when her passions are likewise cast out in the form of the Demiurge. From this Demiurge then comes the creation of man and his material world, ultimately born out of ignorance, confusion, and grief. After these three successive falls and redemptions, man is finally formed of the hylic (or material, from the disharmony and rebellion of the creation act), the psychic (from the conversion of Achamoth, therefore, also from the Demiurge), and of the spirit (a direct inheritance from Achamoth).<sup>2</sup>

In 1955, a new book called the Urantia Book appeared with an altogether different creation story—one that brought together physics and philosophy, biology, psychology, theology, and other disciplines into an integrated system which attempted to explain man's place in the universe as well as his relationship to God. This book claims to be of direct revelatory origin, being compiled for human understanding in the 20th century and following. Its systems of explanation of God, man, and their relationships do at first appearance bear some resemblance to 2nd century Gnosticism. However, the differences far outnumber the similarities, and the similarities of each system diverge far and away from each other upon closer examination.

The creation story itself points up some basic discrepancies between Gnosticism and the Urantia Book. In the Gnostic systems, the father of all is unknowable to his creation, and so is minimized in importance as far as his creatures are concerned in this way. Any personal attributes such as consciousness extending beyond himself or

love for his creation are beyond possibility. Man also is characterized without the freedom of choice which is granted him by the Urantia Book (as well as by traditional Christianity). In the Gnostic systems, man is but a lost fragment of spirit, almost purposelessly trying to find its way back to its unpolluted primeval form. This, of course, is derived from the dualistic nature of Gnosticism (stressing the evil of all matter and the goodness of all spirit), and brings us to the most important distinction between the Urantia Book and Gnosticism, that is, the purpose of man's being.

According to Valentinus' myth, man exists because of three successive falls. Emanation does not seem to fit as a description here; for after the first creation of the Pleroma, creatures are no longer coming into being through a natural or necessary flow of life from the creators. Instead life is painfully wrought, born out of the ignorant and failing attempt of Sophia's desire to create. And this initial failure is yet two generations away from the creation of man as the lowest creature! By the time he is created, about the only purpose of his existence is to act as a vehicle of expression for the "formless substance" from the higher creatures in order that they may be redeemed! Only through the infusion of spirit by Achamoth (unknown to the creator Demiurge) was man destined to have any meaning at all. And the purpose of this infusion was at best a negative one, that is, to allow escape of that spirit fragment with the rejection of its material embodiment. Nothing is to be benefitted that fragment by its stay on earth; its psychic counterpart is destined to be shed with the hyllic to be eventually consumed and destroyed.<sup>3</sup>

The Urantia Book shows a drastically different purpose for man's existence. The creation could be described as emanation; however, it is definitely dynamic in its planning and purpose. The dualism of Gnosticism is replaced by a philosophy which speaks of a purpose for everything in all creation that contributes in some way to the growth of all will creatures, ranging from the father of everything all the way to man himself. Nothing is created arbitrarily according to this system, and where evolving material existence eliminates the possibility of created perfection, equal compensation is made to those material creatures through the invaluable and otherwise unattainable wisdom gained by experience. Truly no will creature is deprived of the potential for a sort of perfect wisdom; either one is created with inherent perfection, or else one is created with the opportunity to attain an evolutionary perfection of wisdom that those inherently perfect creatures will likewise never have. Indeed, these two perfect and perfected types are so designed to complement each other in the workings of such a manifold creation consisting of both material and spiritual beings.<sup>4</sup>

The sloughing off of the material entity in order to reach a pure spirit form is not set forth in the Urantia Book, either. While maintaining the ultimate reality of spirit as opposed to the admitted limitations of spacial and temporal being, simple and pure spirit is not the goal of evolutionary creatures such as man. Indeed, pure spirit cannot in itself make up a personality; there is no such being as a pure spirit. Mind, along with matter, serves as "an experiential

variable" which is modified and incorporated along with spirit into the surviving personalities originally native to time and space.<sup>5</sup>

The dynamism of God according to the Urantia Book is further characterized in a doctrine which may well be unique to it. For the enrichment of his creation, God the father continually gives over every possible function to his creatures that can be performed by them, thus giving ample opportunity for experience and service in fulfilling his divine purpose. This is a god whose purpose extends, voluntarily and necessarily, even down to his lowest created children, e. g. mankind.<sup>6</sup>

After creation is finished and free will is exercised by the creature, the father of creation in the Urantia Book does also share in mans' evolution more directly, perhaps in compensation for the divesting of so much of his power to what may seem to us the rest of an enormous and remote creation.<sup>7</sup> Through endowment of a prepersonal fragment of himself to each of his human children upon their first exercise of free will, he directly offers an inspiring and guiding light for man to follow. On first appearance, this god-fragment would seem to bear some similarity to that spirit fragment which entitles the Gnostic to higher reality and salvation. However, the nature of the surviving element of man according to each system again serves to distinguish the two, especially as far as the destiny of that spirit fragment is concerned.

To begin with the Gnostic interpretation of salvation, the saving gnosis (or knowledge) for which the cult is named refers to a certain awareness of one's fallen condition. In the Valentinian system, gnosis is conferred to only a few, with varying degrees of manifestation in those few. (Essentially, this gnosis is one and the same with salvation.) There are the hylic persons (those without any revelation of their condition at all), the psychic ones (those endowed with an incomplete degree of revelation that will allow them ascent only the edge of the Pleroma and not beyond), and the pneumatic persons (who are endowed with complete revelation, or gnosis, and are therefore destined to ascent to the Pleroma).<sup>8</sup> Gnosis is always revealed, and is not tempered or preceded by faith, but serves in itself as an adequate means to salvation. Those who receive gnosis are recipients by virtue of their own inherent and apparently differing natures, thus the unity of mankind is split by these differing creation endowments.<sup>9</sup> There is no real effort on man's part or real choice in the matter at all; it is just this arbitrariness that is so characteristic of Gnosticism.

The corresponding fragments of god within the context of the Urantia Book are different in nature and function. These fragments work in conjunction and subservience to man's free will, and are not usually agents of direct revelation to us, at least not of conscious and rational knowledge. In fact, the book frequently warns against making the all-too-human error of mistaking our own thought inspirations for direct revelation.<sup>10</sup> When these god-fragments are first assigned to us (upon occasion of our first free-will decision) they are prepersonal beings, made with intent to fuse later on with our

human personalities yielding a new kind of physical form and a necessary transition state between a primarily material existence and a progressing spiritual attainment. This fusion is followed by a long career of experience and learning, and is hardly itself the goal of such an endowment. The simple survival enabled by such fusion is not the objective; ultimately the purpose of that salvation comes back to continuing service in doing the father's will. Neither does fusion put man into direct contact with the father, although it does bring man that much closer toward him and away from the domain of the matter-oriented spheres of his birth.

The term "thought-adjuster" as used by the Urantia Book in reference to the fragment of god is intended to indicate his means of adjusting eternal truths to the point where they are comprehensible and applicable to us and our present situation. (His thoughts are adjusted to us, not our free will to his thoughts.)<sup>11, 12</sup> Thus, God again comes to man where he is; the intention is never to pull one away from any unnatural or unnecessary state. All of God's creation is purposeful and is not to be forsaken; the physical and temporal worlds are schools of experience that man happen to start out in and are highly valued as such, even to the point where Christ himself was incarnated to understand (from the experiential point of view) the lives of his own creatures.

The concept of original sin and subsequent redemption is a Christian doctrine that does not fit either Gnosticism or the Urantia Book. For the Gnostic, sin is simply ignorance of his fallen state, with redemption being a deliverance from the fate of that condition. Human choice of behavior does not enter into salvation, for salvation is through knowledge and not acts.<sup>13</sup> Thus, ethics for the Gnostic is a matter of personal choice, leading to "antinomianism and licence" among the Valentinians,<sup>14</sup> and has nothing to do with salvation.

For the Urantia Book believer, sin consists of purposeful and conscious disobedience or disloyalty to the will of God. It is a personal offense, having nothing to do with a mythical fall of man or with a static created condition, e.g. fate, that man was born into. The presence of sin, then, presupposes that man is able to know God's will and in so doing depend on a human consciousness that is difficult to understand: While keeping in mind the mores and taboos of our own making, it is safe to say that guilt reactions to our own social environment do not qualify as sin. And direct disobedience to the deities necessitates direct knowledge of their will, which is apparently available to us through that god-fragment, although not nearly so easily and consciously as gnosis is to the Gnostic. This is one paradox that shall be left to rest, with only the statement that such perfection of knowledge complete to itself (as in Gnosticism) does not exist in the Urantia Book system. By virtue of this being a personally-run universe, nothing exists simply in perfection without free-will and consciousness; while sin is very possible and indeed existent, this does not take anything away from the perfection of God and his relationship with man.

On the question of salvation, both systems stress negatively the

material aspect of man. For this Gnosticism, this is the complete story of salvation, that is, overt rejection and escape of the material (or hylic) along with rejection of the psychic. Keeping in mind that the psychic element was formed from the "conversion" of Achamoth, involving the casting away of what was to become material creation, perhaps that psychic element would equvalate to man's uniquely human frame of mind found in the Urantia Book system. This would include man's intellect and free will, and above all his personality. This combination, then, is the very stuff which is preserved and built on in our ascension careers instead of being stripped away at the point of salvation. For the Urantia Book system this is not a rejection at all, but rather the beginning of a progression which is based on man's earthly life.

The fact that this world is located on the material outskirts of the cosmological realm presented in the Urantia Book is due to the vastness of God's creation as well as of his plans. The idea is for man to develop an experiential understanding of God that he could gain in no other way as he traverses the circuits of space in approaching God. Thus the entire range of material to spiritual existence is equally involved in at least one common goal: the continuing aid to the evolution of certain will creatures created in that capacity.

In the Valentinian creation myth, the nature of Jesus is clearly spelled out by identification of him with the third redeemer, sent down to man. He consisted of a spirit element (received from Achamoth) and a psychic element (from a previous Saviour, himself second generation to the Pleroma). There was no hylic element in him, and so in order to take on the form of a man, this spirit-psychic being descended on a man named Jesus. Here the Docetism of Gnosticism in general finds its expression in the Valentinian system. Jesus was dualistic along with everything else, being an easily separable mixture of man and mind-spirit when the time came in the resurrection. His mission (again taken from the creation myth) consisted in carrying that redemptive gnosis to those who inherently possessed capacity for receiving it. His was a man-centered mission instead of a god-centered one, although with the full redemption of the dispersed spirit-seed of Achamoth, she too would be allowed to return to the Pleroma.<sup>15</sup> The resurrection of Jesus was viewed as a necessary event to free the Christ from his psychic, as well as the hylic form, into which he incarnated; thus redemption was the theme of Christ's coming--primarily for man, though also to complete his own and that of Achamoth. This ascension, apart from man, will be dealt with later as it relates to the Urantia Book.

In the Urantia Book cosmology, Jesus was an immediate son of God the father who came to earth for essentially two reasons: to gain through the actual living of his human life the first-hand, experiential knowledge of the lives of his own creatures, and to further reveal the father to us. The first of these is entirely in keeping with a Urantia Book theme of evolutionary purpose in a great many more creatures than ourselves, including in this case, Christ himself. (It is important here to note that Jesus, according to the Urantia Book, is not the second person of the trinity; he is, however, an immediate

son of the trinity and, for all practical purposes, is to us as the father of all creation.) So, out of love and a wish for complete understanding of his created children, Jesus willfully was incarnated as a man in both unity of substance and nature. Jesus did all the things that men do because he was a man, including suffering intensely at the hands of other men as much, or more, than any man ever will have to suffer. But the suffering of his human life was not in repentance for man's sins; it was instead to complete an experiential act of his own, allowing him to understand "at all points" the trials of men, and in so doing reign over his universe in a sovereignty broadened by this understanding.<sup>16, 17</sup> The other reason, certainly important in its own right, although not the primary reason of his coming, was to aid in the spiritual uplifting of an historically troubled world. The revelation brought by him was neither the first nor is to be the last celestial revelation brought to this planet. Of the other four, two of those are already familiar to us through Biblical literature in the form of Adam and Eve and the priest of Salem named Melchizedek.<sup>18</sup>

The salvation scheme of the Urantia Book can also be used to illustrate the comparative self-centeredness of Gnosticism. In the Urantia Book, man is not the sole reason for Christ's coming, at least not for the purpose of giving a mystical key to salvation to man. While man is ultimately the better for Christ's coming, Christ is also the better for widening the range of his own experiential understanding. This, then, benefits all the will and personal creatures of his making through a wiser and more loving understanding of them in his ministration to them. (In considering the rest of his creation, the Urantia Book is quick to establish cosmological perspective: Earth is but one of many inhabited worlds, similar in nature to most of the rest of them although each has been allowed to evolve in its own spiritual path over the ages. Thus each world has its own unique history and problems, leaving also a sort of unique birthmark on the ascending beings that hail from it.)

In considering human-human associations (ethics) and human-divine associations (such as the relation earlier mentioned between man and his thought-adjuster), man is again urged to recognize the responsibility that he bears instead of assuming that God in his providence caters to every self-centered need that he has. Too often we attribute our own acts and decisions to the sanctioning works of God himself; one such example can be found in the treatment of the marriage institution.<sup>19</sup>

One more illustration is here offered of the self-centeredness of Gnosticism. In Valentinian apocalypse, the hylic and psychic material are to be consumed after man's spiritual departure. This could infer that their only purpose is for man's benefit and is therefore completed with the departure of all the fragments of the spirit seed of Achamoth. While it is true, according to the Urantia Book, that the material world has no significance without personal beings in it, there is no such equivalent destruction of the material sphere after the resurrection of the entire human race. It is significant that the sphere is modified to follow the progressive spiritual at-

tainment of its inhabitants, and becomes "the acme of material development" in the continuing course of evolution.<sup>20</sup>

There is but one last point to be pursued here that might link the Urantia Book to Gnosticism, and this refers back to the ascension of Christ after the completion of his earthly mission. The restoration of Achamoth to the Pleroma marks the completed restoration of the original fall of Sophia. Creation is returned to a mechanical, perfected state where it would only be a repetitious cycle to have another such fall and redemption. Thus, the only source of dynamism in this creation has run its course. With the attainment of sovereign rule over his universe in the Urantia Book system, God's purpose is still in the process of being fulfilled. Personalities are retained and enhanced by this incarnation as in all of God's plan, thus ensuring the positive dynamism for all eternity wherever there exists personal presence along with its inherent free-will and consciousness. The Urantia Book does not postulate that day when evolution is complete. To do so would be utterly foolish because of the oversimplification and consequent meaninglessness of such an attempt. Let it suffice to say that (according to the Urantia Book) we as humans and children of God are in the ever-progressing stream of all creation, moving slowly but surely nearer to the loving embrace of the father of all creation.

FOOTNOTES

<sup>1</sup>Robert McL. Wilson, The Gnostic Problem (London: A. R. Mowbray & Co. Limited, 1958) PP. 128-132.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid. p. 132.

<sup>4</sup>The Urantia Book, (Chicago: The Urantia Foundation, 1955) p. 216.

<sup>5</sup>Ibid. p. 140.

<sup>6</sup>Ibid. pp. 363-364.

<sup>7</sup>Ibid.

<sup>8</sup>Wilson, p. 208.

<sup>9</sup>R. M. Grant, Gnosticism and Early Christianity (New York: Columbia University Press, 1959) p. 172.

<sup>10</sup>The Urantia Book, pp. 1207-1208.

<sup>11</sup>Ibid. p. 1191.

<sup>12</sup>Ibid. pp. 1204-1205.

<sup>13</sup>Wilson, p. 76.

<sup>14</sup>Ibid. p. 132.

<sup>15</sup>Ibid.

<sup>16</sup>The Urantia Book, p. 1395.

<sup>17</sup>Ibid. p. 1408.

<sup>18</sup>Ibid. p. 1007.

<sup>19</sup>Ibid. p. 929.

<sup>20</sup>Ibid. p. 629.



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EIN KURZER ABRISS VON WICHTIGEN BEITRÄGERN  
ZU DER RELIGIÖSEN GEDANKEN TAGORES

by  
Tony K. Stewart

Rabindrānath Tagore (n.Chr. 1861-1941), der erste asiatische Nobel-Preis-Träger, war besonders in der Entwicklung der Beziehung vom Menschen und seiner Religion beschäftigt. Dieses Thema durchdringt seine Arbeit. Die Dichtung war sein bestes Genre aber er hat alle literarischen Genres benützt. Im Laufe seines Lebens hatte Tagore viele Lieder, kurze Geschichten, Romane, und Gedichte geschrieben. Als er siebzig Jahre alt war, hatte Tagore die Malerkunst gepflegt. Vor seinem Tod, der Jahre später war, erschuff Rabindranath zwei tausend Bilder.

Tagore war für den Sinn des Kosmos interessiert und suchte ihn durch die Ästhetik. Als Wahrheitsuchender war er der Natur des Menschen und auch des Gottes begegnet. Sein religiöses System war nicht planmässig. Er sagte selbst, dass er die Religion eines Dichters gehabt hat und auch, dass er kein Philosoph war. Diese Behauptung ist wirklich richtig. In seiner Dissertation schrieb V.S. Naravane, ein berühmter indischer Lehrer, dass die Arbeit von Tagore eine Sache war, woran man sich erfreuen muss und nicht eine Theorie, an welche man analysiert. Das meinte, dass seine Arbeit "rāsa vāstu" ist.<sup>1</sup> Es ist klar, warum Tagore die Föhlung der Religion dargestellt hat, wenn man seine Kindheit, Familie und Erziehung studiert.

Die Umgebung, worin das fruhe Leben Rabindrānaths sich abspielte, war sehr einzigartig. Seine Familie wurde von der hohen Schicht der bengalischen Volksgemeinschaft verbannt worden. Die nützten diese Situation schnell aus. George Catlin hat gesagt, dass Tagore wie ein kulturelles Mitglied eines grossen, traditionellen knoservitimus war, in welchem der Vater, wie er selbst, ein Liberaler geworden war.<sup>2</sup> Innerhalb dieses Rahmens entwickeltete sich Tagore fast vollständig frei von dem sozialischen Zwang. Diese Freiheit war in der Religion besonders merklich. Tagore schrieb:

Mein Geist war in der Luft der Freiheit aufgezogen-- frei von dem Vorherrschen eines Glaubensbekenntnis, das ihre Sanktion in der bestimmten Glaubwürdigkeit einiger heiligen Schriften oder in dem Unterrichten einiger Organisation der Andächigen hatte.<sup>3</sup>

Er sagte auch:

Es war mir umöglich irgend eine religiöse Lehre anzunehmen, nur deswegen weil die Leute meiner Umgebung es für die Wahrheit halten. Ich konnte mich nicht überzeugen, es mir vorzustellen, dass ich

die Religion habe, nur weil jedermann, dem ich vertrauen darf, an ihren Wert glaubte.<sup>4</sup>

Die Familie, mit Bewusstsein der Weisheit der frühen Tradition, folgt den "Upanisads". Ihre Religion war eine friedliche und reine Abstraktion.<sup>5</sup> Man kann diese Geisteshaltung besser verstehen, wenn man den Glauben seines Vaters, Debendranath, sieht. Ein "sloka", das vom Isopanisad war, hat einen tiefen Einfluss. Es steht in diesem Isopanisad geschrieben, dass nur existiert, das Sein ist. "Er dringt den ganzen Kosmos ein. Erfreuen Sie sich an das, was nur von ihm gegeben ist. Habe Sie keine Gier."<sup>6</sup> Debendranath hat eine Idee der Beziehung des Gottes und der Menschheit zu Rabindranath auch gegeben. Er sagte:

Das Universum ist wie ein Armluchter und jedes lebendige Wesen ist ein Licht daran. Die Menschheit zeigt deutlich den Heiligenschein des Gottes. Ohne das, wer konnte das Universum kennen? Ohne die Lichter kann niemand den Armluchter selbst sehen.<sup>7</sup>

Die liberalistische religiöse Gruppe, "Bramo Samaj", worin Debendranath verwickelt war, nutete diese gleichen nichtpantheistischen Themen der "Upanisads". Rabindranath, der der Komponist der Organisation wurde, war von Ram Mohan Roy, dem Führer, angegriffen. Tagore sprach von ihm:

Ram Mohan Roy war der erste wichtige Mann unseres Alters, mit der Weite des Geistes die wesentliche Einheit der hinduistischen, christlichen und islamischen Kultur klar einzusehen. Er vertrat die indischen Leute in der Vollheit, nicht auf der Zurückweisung, aber aus vollkommenem Verständnis. Ich folge ihm, obwohl er von meinen Landsleuten fast nicht anzunehmen ist.<sup>8</sup>

Der christliche Glaube spielte nur eine kleine Rolle in der Entwicklung des religiösen Begriffs Tagores. Er fand etwas davon durch die "Bramo Samaj" und auch in seinem Beleiter, C. F. Andrews, der ein christlicher Missionar war. Buddhismus hatte einen strengen Einfluss auf seine Gedanken, besonders die Idee des vollständigen Mitleids.<sup>9</sup> Durch seine erste Berührung mit den bengalischen niederen Klassen, hatte die "Vaisnava bhakti" Bewegung seine grosse, reife Weltanschauung beeinflusst. Er bekam von dieser Gruppe sein erstes Verständnis für die innere Bedeutung der Schöpfung und Liebe.<sup>10</sup>

Vielleicht waren die wichtigsten und wahrscheinlich offensichtlich Beiträge zu der Erschaffung Tagores die Bauls, die eine primitive Gruppe von Bengal sind. Diese Banden der wandernden religiösen Menschen vertraten fast genau den Sinn seiner Gedanken. Obgleich seine Ideen der Bauls sehr idealistisch war, hatten die bei ihrem Mystizismus auf Tagore eingewirkt. Die Bauls erkennen, wie Tagore selbst, keine soziale oder religiöse Trennung zwischen Menschen an. Die meinten auch, dass alle Menschen die Reisenden auf dem gleichen Weg nach dem Gott sind. Die nahmen keine Formen des Rituals als rechtskräftig an, sahen keine Unterschiede zwischen den vorgeschriebenen Gottesdiensten.<sup>11</sup>

Einfache Worte können überwinden  
 die Unwissenheit und den Unglauben:  
 Kāli und Krsna einzig sind.  
 Die Wörter dürfen sich unterscheiden--  
 der Sinn ist genau derselbe.  
 Er, der die Sperre der Worte  
 zerschlagen hat,  
 hat die Schranken besiegt.  
 Allah oder Jesus, Moses oder Kāli,  
 die Reichen oder die Armen,  
 der Weise oder der Narr,  
 Alle sind ihm ein und derselbe.<sup>12</sup>

Tagore schätzte die Religion der Bāuls als diejenige, die mehr um die menschliche Persönlichkeit des Gottes besorgt ist.<sup>13</sup> In Die Religion der Menschen zitierte er ein Lied der Bāuls, das bei ihm erweckte und charakteristisch für viele seiner religiösen Schöpfung ist:

Die Tempel und die Moscheen versperren deinen Weg,  
 und ich versage, dein en Ruf zu hören oder zu ziehen,  
 wenn die Lehrer und die Priester zornig um mich  
 bedrängen. . .  
 Die Liebe ist der zauberische Stein, die  
 durch ihre Berührung die Gier ins Opfer umwandelt. . .  
 Um dieser Liebe willen sehnen sich der Himmel  
 die Erde und die Götter die Menschen zu werden.<sup>14</sup>

Es sollte bemerkt sein, dass der Nachdruck der Liebe vielleicht vom "Vaisnave" Glaube ist. Dieser Glaube war in Bengal seit dem Alter Caitanyas (n.Chr. 1486-1583). Also kann man sehen, dass Tagore einen doppelten Einfluss von den "Vaisnavas" bekam, einen von den Bāuls und den anderen von der volkstümlichen religiösen Bewegung.<sup>15</sup>

Im Geist der Bāuls, die der höchst wirklichen Einfluss Tagores waren, hatte er sein religiöses Verständnis entwickelt. Er systematisierte seine Philosophie oder Theologie nicht, aber hatte als Grundlage die intuitive Erfahrung. Die Logik und die Vernunft wurden dazu untergeordnet aber wurden wirklich nicht im Streit damit. In der Erreichung seiner Erfüllung setzte Tagore seinen eigenen Stil der religiösen Eingebung voraus:

Im wesentlichen ist meine Religion eine Religion  
 des Dichters. Ihre Berührung kommt zu mir durch  
 den gleichen pfadlosen Weg wie die Erleuchtung  
 meiner Musik. Mein religiöses Leben und mein Leben  
 des Dichters sind demselben mysteriösen Wuchs gefolgt.  
 Irgendwie sind die miteinander verheiratet und, obwohl  
 ihre Verlobung eine lange Zeit der Zeremonie hatte, waren  
 die von mir verschwiegen. Dann plötzlich kommt ein Tag  
 als ihre Vereinigung zu mir offenbaren war.<sup>16</sup>

Sein endgültiger Weg wurde in einem Excerpt eines Briefes scharf abgehoben:

Die Religion, die wir von dem Äusseren kennen werden,  
die aus Büchern der heiligen Schriften ist, kann  
nicht unsere eigene Religion werden. Ihre Verbindung  
ist mit uns nur eine Angelangenheit der Gewohnheit.  
Der lebenslängliche Wunsch jeder menschlichen  
Seele ist die Religion innerhalb des Selbsts zu ent-  
hüllen. Die hat ihre Geburt in stechendem Leiden.  
Ich möchte die die Nahrung mit meinem Herzblut geben.  
Ob dies mir die Freude ins Leben oder nicht bringt,  
hoffe ich, dass ich meinen Tod mit der Weisheit der  
Fröhlichkeit, die in der Erfüllung ist, finden kann.<sup>17</sup>

## FOOTNOTES

<sup>1</sup>Taken from conversation with Dr. Donald R. Tuck, Department of Philosophy and Religion, Western Kentucky University, in reference to V.S. Naravane's Thesis entitled Philosophy of Rabindrānath Tagore. It should be noted that Bengali and Sanskrit words, unless proper names, are placed in quotation marks throughout the text and conform to standard English transliterations.

<sup>2</sup>George E.G. Catlin, Rabindrānath Tagore (Calcutta: Allied Publishers Private Limited, 1964) p. 9.

<sup>3</sup>Rabindrānath Tagore, The Religion of Man (Boston: Beacon Press, 1970) p. 92.

<sup>4</sup>Tagore, A Tagore Reader, trans. by Amiya Chakravarty (Boston: Beacon Press, 1961) pp. 85-86.

<sup>5</sup>Tagore, A Tagore Testament, trans. by Indu Dutt (London: Meridan Books, 1953) p. 78.

<sup>6</sup>Benoy Gopal Ray, The Philosophy of Rabindrānath Tagore (Calcutta: Progressive Publishers, 1970) p. 1.

<sup>7</sup>Robert A. McDermott and V.S. Naravane, eds., The Spirit of Modern India (New York: Thomas Y. Crowell Company, 1974) p. 29.

<sup>8</sup>Rama Shankar Srivastana, Contemporary Indian Philosophy (Delhi: Munshi Ram Manohar Lal, Pub., 1965) p. 82.

<sup>9</sup>A. D. Litman, "Philosophical Views of Rabindranath Tagore", The Visva Bharati Quarterly, Vol. 24, No. 4 (1963) p. 305.

<sup>10</sup>Ray, pp. 7-8.

<sup>11</sup>Edward C. Dimock, Jr., "Rabindrānath Tagore - 'The Greatest of the Bāuls of Bengal'", The Journal of Asian Studies, Vol. XIX, No. 1 (November, 1959) pp. 37, 39.

<sup>12</sup>Deben Bhattacharya, trans., Songs of the Bards of Bengal (New York: Grove Press, Inc., 1969) p. 44.

<sup>13</sup>Tagore, The Religion of Man, pp. 18-19.

<sup>14</sup>Ibid. pp. 110-111.

<sup>15</sup>Bhattacharya, p. 33.

<sup>16</sup>Tagore, A Tagore Reader, p. 86.

<sup>17</sup>Tagore, A Tagore Testament, p. 50.

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