

HEALTH AND STRESS

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SE SCIO! OR HOW WE OFTEN CREATE OUR OWN STRESS

KEYWORDS: "Everything in moderation-and moderation even in that", "the problem of the new", defining intelligence, errors of omission, false optimism about being "above average" and meeting deadlines, the "stress-illness rule", media influences, "medical students' disease", "Go Red For Women" coronary campaign, eggs get a "Health Tick", A Man For All Seasons

In Greek mythology, the wisest person in the world was the Delphic oracle of Apollo, who could even predict the future. Socrates, Oedipus, King Croesus and people from all over traveled to Apollo's holy shrine at Delphi to seek advice about everything from when to plant crops or wage war to whom they should wed. Delphi, which was located at the base of Mount Parnassus, was considered to be the center of the world. The place of prophecy was marked by the *Omphalus* (navel), a large, carved dome-like rock purported to be the first thing to emerge after the great flood that covered the earth. Apollo, the God of light, poetry, music, healing and prophesy, spoke through his Oracle or Sibyl, an older woman of impeccable character chosen from among the local peasants. She allegedly sat on a special three-legged seat when listening to requests, after which, having been driven into a state of ecstasy inspired by Apollo, she would relay his recommendations. These often proved to be so ambiguous, cryptic or confusing that they could not be proven wrong or required interpretation by the temple priests, such as "Nothing in excess. Everything in moderation — and moderation even in that."



The Omphalus at Delphi, the navel of the world, Archaeological Museum, Delphi



Oracle giving advice to a pilgrim (From the Vulci crater by the Codrus Painter, circa 450 B.C.)

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However, the most famous advice or pronouncement of Apollo's celebrated Oracle at Delphi was by far "Se Scio" — Know Thyself! Similar advice has surfaced in the more than 30 centuries since then. Socrates said, "The shortest and surest way to live with honor in the world, is to be in reality what we would appear to be" and Cicero wrote, "No one can give you better

advice than yourself." The problem is that **we often don't see things and ourselves as they really are but rather as we perceive them to be.** As Shakespeare observed, "The fool doth think himself wise, but the wise man knows himself to be a fool." *As You Like It*, Act V, i. And the advice that Shakespeare had Polonius give to Laertes was,

"This above all.

To thine own-self be true;

And it must follow, as the night the day,

Thou can'st not then be false to any man" *Hamlet* Act I, iii

A century later, in a poem entitled "The Riddle of the World", Alexander Pope wrote,

"Know then thyself, presume not God to scan,

The proper study of mankind is man." *Essay on Man*, Epistle ii.

What brought all of the above to mind was a recent article summarizing research from a variety of different disciplines demonstrating the widespread inaccuracy of self-knowledge. Whether at work, school, sports, or in how they perceive their health status, people's opinion of themselves and their abilities are usually slanted in a peculiarly positive position. They define competence in a way that places their own performance in the best possible light and for tasks with multiple components, they neglect what they do poorly and concentrate on demands in which their proficiency is at least adequate. As an accompanying editorial noted, it is almost as if we all lived in Garrison Keillor's fictional Lake Wobegone where, according to his *Prairie Home Companion*, "all the women are strong, all the men are good-looking **and all the children are above average.**" Such attitudes are hardly limited to rural Minnesota. How many people do you know who don't sincerely believe that their children, and especially grandchildren, are superior to others in certain respects, despite the absence of any significant objective support. However, when this same sort of erroneous self-assessment occurs in evaluating personal health or susceptibility to stress, it can have dangerous consequences. After several decades of seeing patients, I can recall many who were hypochondriacal or overly concerned about nonexistent health problems due to unfounded fears. I was therefore somewhat surprised to learn that **most people generally tend to overestimate their own resistance to significant health risks** such as hypertension, heart disease and cancer. In retrospect, I now suspect that such patients probably tended not to see physicians because of a false feeling of superior health, and that when they did, it was quite apparent that most should have sought assistance for their symptoms much sooner. Even doctors can be surprisingly lax about their own health or overestimate their capability in treating problems outside their areas of experience, training or specialization due to a similar sense of superiority.

Blissful Incompetence Is Prevalent And Pernicious

As Thomas Carlyle noted, **"The greatest of faults, I should say, is to be conscious of none."** This review focused on three main areas where faulty self-assessment led to blissful incompetence: education, the workplace and health, and demonstrated that the same type of overconfidence occurred at all educational levels. Students and others undergoing some sort of schooling, professional or post graduate training showed a strong tendency to overestimate their ability to acquire new knowledge or skills. Their teachers and even peers were generally much better at accurately predicting how well they would perform on tests or tasks. Such flawed feelings of self-knowledge and superiority were also seen in the workplace, where most employees frequently underestimated how long it would take them to complete an assignment. CEO's, managers and entrepreneurs were often overconfident when making business decisions, particularly when it involved getting into unfamiliar areas like starting up a new business or acquiring an existing one — a problem the authors referred to as "the problem of the new." In many such instances, proposed acquisitions that had been predicted would significantly boost the price of their company's stock had the reverse effect.

People tend to believe that they are above average on traits that are difficult to define such as being sophisticated, idealistic or intelligent. **But how would you go about determining who is the most sophisticated or intelligent person in a room?** Which is more important –having a large vocabulary, superior mathematical skills, knowledge of fine wines and their preferred vintages, fluency in three or more languages, or an enhanced ability to assess non-verbal behavior? Those who are adept at mathematics are much more apt to consider this ability to be more related to intelligence than others with poor math skills. Similarly, people who adhere to social norms will consider that habit a better indicator of intelligence than nonconformists. Many who consider themselves above average or who overestimate their competency often do so because they don't possess all the information that is required to make an accurate self-assessment. For example, if students were asked to list as many English words as possible using the letters in "spontaneous" (e.g., tan, neon, pants), and some found 50 or even 100, they might readily conclude that they were well above average because they were unaware that there are more than 1500 correct answers.

Most individuals are apt to believe they are above average because they have little insight into such errors of omission. In a survey of nearly one million high school seniors, 70% stated that they had "above average" leadership skills, but only 2% felt their leadership skills were "below average". Almost all respondents rated themselves above average on being able to get along with others—with 60% rating themselves in the top 10% of this ability and 25% rating themselves in the top 1 percent – all of which is mathematically impossible. Several studies also showed that students who performed poorly compared to their peers had little insight into the degree of their deficiency. College students scoring in the lowest 25% of an examination believed they had outperformed most of their classmates when surveyed immediately after the test. Debating teams who performed in the bottom 25% at a regional tournament also believed they were winning 60% of the time. Such superior self-assessments are hardly limited to college students. Motorcyclists think they are less likely to cause an accident than the average biker, lawyers overestimate the probability that they will win cases they are about to try, people who pick stocks believe the ones that they purchase are much more likely to end up winners than those of the average investor and 94% of college professors say they do above-average work. People signing up to bungee jump believe they are more likely to avoid injury than other jumpers although their friends and family usually do not share this opinion.

Medical students who mishandled mock interviews with a patient rated their interviewing skills much higher than their instructors' appraisals. Hospital lab technicians performing in the bottom 25% had no clue that their competence was so poor compared to their peers. Family practice residents' self-rated skill at interviewing patients and soliciting relevant health information only agreed with the ratings provided by their instructors 30% of the time. One of the most sobering findings was that surgical residents' views of their abilities showed little correlation with their performance on standardized board qualification examinations. Poor correlation was also seen between the confidence of nurses in their capability to perform basic life-support tasks and their knowledge of what actually was required. Clinical psychologists who had thoroughly reviewed a client's case materials routinely overestimated the likelihood that their predictions would prove accurate. **In one study in which doctors diagnosed their patients as having pneumonia with almost a 90% degree of confidence, they were correct only 20% of the time.** Physicians' self-rated knowledge about thyroid disorders also failed to correlate with their performance on a quiz dealing with this topic.

Ironically, many people are quite certain that they are much more likely than their peers to provide completely unbiased and accurate self-assessments. They also overestimate the likelihood that their personal future actions will be socially desirable although their predictions about how their peers would behave actually proved to be more accurate. In one large University class, 83% of students predicted that they would buy flowers in a

forthcoming annual charity drive for the American Cancer Society, but that only 55% of their fellow students would do the same. Four weeks later, the actual percentage buying flowers proved to be 43 percent. In another class, 90% claimed that they would vote in an upcoming presidential election in contrast to only 75% of their peers but only 69% did. Other research confirms similar errors in self-prediction and more accuracy for how classmates would perform when students were asked to estimate how much money they would donate to charity, whether they would volunteer for a lengthy experiment that might benefit a sick child or whether their romantic relationships would last longer than six months.

One of the best illustrations of a false sense of self-confidence was seen in attempts to establish and adhere to a deadline, something I could immediately identify with. This often happens when people tend to define competence in a way that emphasizes their skills while neglecting areas in which they are not proficient or factors over which they have no control. They overestimate how much time they will have available, underestimate how much time it will actually take, as well as the impact of intervening influences like interference from family or personal matters, illness and the importance of what kind of mood they are in if the assignment requires creativity. In one study, the amount of time college students took to finish their senior thesis averaged 3 weeks longer than their most "realistic" estimates and 1 week longer than what they had described as a "worst case" scenario. In another, researchers asked students working on a class assignment to indicate the time within which they were 50% certain they could finish the project as well as a date when they were 99% positive it would be completed. On average, had the students' estimates been accurate, about half would have finished by their 50% deadlines but this proved true for only 13 percent. While 99% should also have completed the assignment by their very most conservative predictions, only 45% were successful, showing that even for deadlines they were virtually certain they could easily beat or meet, their degree of confidence far exceeded their actual accomplishments.

What I found intriguing about these and similar studies is that this unfounded optimism persists despite a lifetime of experience that people readily admit demonstrates they are rarely able to complete projects before their deadlines. Most usually consider the unique features of the assignment and imagine a series of steps that will lead them from a starting point to a solution. In doing so, they focus more on their abilities and resources rather than how possible obstacles can be avoided or overcome. However, their planning fails because they ignore their past experiences or that of others in similar situations, which would have led to a different conclusion. In one experiment where participants were asked to think aloud about a project, 74% of their thoughts were about the future, which they projected to be particularly rosy. Only 3% of the participants spontaneously considered potential problems and only 7% considered information relevant to the particular project such as their own past experiences with analogous assignments. When students in another study were asked to indicate when they would complete an academic task they expected that they would have everything done about 4 days in advance of the deadline, a feat that only about 30% actually achieved. But when asked when they normally accomplished such tasks, they admitted that they usually finished only 1 day before the deadline—and this proved to be true for the particular project they were working on at the time. A random sample of Canadian taxpayers thought they would mail in their current tax returns about a week earlier than usual but they generally completed them around the same time as for previous years. When a group of academics working on revising the curriculum of a local high school system were asked how long it would take them to finish their assignment, the most pessimistic prediction was 30 months. However, when one member of the group with extensive experience was questioned, he conceded that it usually took such groups at least 7 years to complete their task, if they completed it at all. This specific group did not complete its assignment until 8 years later.

One of the major contributors to a false sense of superiority is the focus on personal abilities when making comparative judgments while failing to consider the attributes of others. When people were asked about their ability to ride a bicycle compared to others the majority responded above average since although they would probably have little difficulty, they forgot that this is also true for most others. In contrast, when asked about how well they could juggle they describe themselves as below average because they failed to realize that the majority of their peers were poor jugglers. People tend to bet more in poker games as the number of wild cards increases because they are more likely to have a good-looking hand and tend to downplay the fact that other players have the same advantage. People are more apt to believe that they are superior or above average about matters that are under their control. They feel they would be less likely than others to be involved in auto accidents when they were the driver but not if they were a passenger. They also believe they are more likely than their peers to avoid any hazards associated with high-fat or alcohol intake but not when it comes to risks over which they had much less control such as exposure to pesticides and other environmental contaminants.

Poor Self-Assessment Of Personal Health

I was particularly interested in the impact of poor self-assessment on personal health. Estimations of future health behaviors like losing weight, smoking cessation, reduction of alcohol intake or increasing exercise habits were also often overly optimistic. Office workers interviewed just after eating a substantial lunch said they would rather have an apple or some healthier snack than a candy bar delivered to them late in the afternoon when they begin to feel hungry again. However, when the delivery day and time arrived the following week they tended to choose the more filling candy bar over the healthy snack they previously predicted they would prefer. Of the three most desirable assets Benjamin Franklin listed in his widely cited advice, healthy preceded wealthy and wise. Physical health is also consistently rated as the most valued of personal resources in public opinion polls and the U.S. spends more of its gross domestic product on health services than any other country. One might therefore assume that people would be highly motivated to understand their personal risk for developing a serious illness or injury. However, as in other areas of life, they tend to be unrealistically optimistic about their health and perceive themselves to be significantly less likely than their peers to develop a wide range of diseases or other health problems.

When a large sample of healthy adults completed a questionnaire listing hazards like food poisoning, lung cancer, drug addiction, ulcer, mugging, stroke, serious auto injury, cancer or hypertension, they typically rated their personal risk as below average. They often succumbed to the many misperceptions and erroneous beliefs about personal health risks because of mistaken self-judgments that influence their willingness to obtain health care and/or adhere to medical regimens. People expect symptoms to denote illness, and they expect illness to be accompanied by symptoms, which can lead many to believe that they are healthy if they have no complaints. Essential hypertension is called "the silent killer" because patients rarely have any symptoms or signals to indicate that their blood pressure may be dangerously elevated. Despite this, 46% to 94% of hypertensives believe they can tell when their pressure is high because of a headache or flushed feeling and may tend to take their medications only at such times. Being overly optimistic often dissuades people from learning about or adopting preventive measures because they do not feel at risk. They are less likely to obtain a flu shot or use contraceptives and are more likely to engage in high-risk sex than others without this false sense of immunity. Many are also apt to be unrealistically optimistic about their own health risks compared to others when it comes to things like alcohol consumption and smoking. Guided by seemingly plausible but mistaken theories of health and disease, others misdiagnose and mistreat themselves with megadoses of nutritional supplements or take non-prescription drugs that can have dangerous effects on health and longevity. Patients, especially elderly ones, frequently dismiss their doctors' recommendations because they believe they know much more about what might be best for them.

The stress-illness rule is a common self-centered excuse that can lead to ignoring or minimizing symptoms that could be significant. Headache, feeling fatigued or a sudden change in bowel habit were apt to be attributed to stress by students studying for final exams or people who recently or were currently experiencing some stressful situation. Mistaken notions of disease can also emanate from direct to consumer TV drug advertisements and other media influences. Shortly after a highly publicized study in the *New England Journal of Medicine* reported that chronic heartburn was associated with an increased risk of developing esophageal cancer, there was a sharp increase in visits to gastroenterologists by patients with chronic heartburn. The incidence of heartburn in the general population had not increased but the mass media blitz now made such symptoms more important as a potentially serious health risk rather than being dismissed as a reaction to spicy foods. When people learn that the "flu season" has started there is an abrupt rise in ambiguous symptoms such as scratchy throat and headache. Another example is "medical students' disease", which is not uncommon in future doctors who learn about the symptoms of various disorders and become convinced that they have contracted one or more of these at some time.

Correcting The Problem Is Easier Said Than Done

Benjamin Franklin wrote in his 1750 Poor Richard's Almanac that **"There are three things extremely hard: steel, a diamond, and to know one's self."** As this review vividly demonstrated, the problem of achieving accurate self-knowledge hasn't gotten any easier in the more than 250 years since then. One reason may be, as Richard Feynman noted, "The first principle is that you must not fool yourself -- and you are the easiest person to fool." Why we so often disregard the significance of our past experiences is hard to understand since it has long been observed that **those who fail to learn the mistakes of history are doomed to repeat them.** The authors also address this problem and cite evidence that reviewing one's past performance can lead to better self-assessment for various skills. Medical students were able to achieve a more accurate appreciation of their interviewing abilities by watching videotapes of their performance, especially when these were simultaneously viewed by faculty members who could identify errors. In another study, students taking a clinical dietitian course were asked to periodically rate their performance and then meet with a faculty member who also provided an assessment and explained the reasons why it was different. It was found that as this was repeated, student self-assessments corresponded more closely with those of their supervisors.

In some instances, educational efforts may be needed to avoid erroneous evaluations, especially those based on social stereotypes. One example cited was heart attacks in women that may explain why their complications and mortality rates are higher compared to men. When heart attack symptoms of chest pain, shortness of breath and sweating occur, prompt medical attention is indicated because early clotblusting therapies are crucial to preserve heart tissue. However, almost half of heart attack victims delay seeking medical attention for more than 2 hours and a significant number wait for more than 4 hours. Several large scale studies have shown that women are much more guilty of this even though they tend to be more sensitive to most other health threats and report more physical symptoms than men. The explanation offered for their delay is that prior to age 65, heart disease is much more common in men than women. As Rosenman and Friedman noted almost 50 years ago when they described Type A coronary prone behavior as a predominantly male trait, it is much easier to think of heart disease as a male rather than female disorder. Consequently, when the symptoms noted above occur in men they are likely to be associated with a heart attack whereas women may be more apt to regard them as due to stress or some other disorder.

In one recent study of male and female heart attack survivors with comparable age, risk status, symptoms and similar medical histories, women were much less likely to have attributed their complaints to cardiac causes. In addition, among the patients who had received opinions and advice about their symptoms, women were also less likely to be told

that they might be indicative of a heart attack or to consult a physician. In an attempt to correct these dangerous tendencies, the American Heart Association currently sponsors the "Go Red for Women" campaign, which is designed to raise consciousness about the prevalence and early signs of heart disease in women. These are only some of the highlights of this very comprehensive monograph* which has numerous references and is highly recommended.

*Dunning D, Heath C, and Suls JM. Flawed Self-Assessment: Implications for Health, Education, and the Workplace. *Psychological Science In The Public Interest*. 2004; Volume 5, Number 3 pp. 69-106 American Psychological Society, Washington.



If there was ever a physician not guilty of erroneous self-assessment or superiority it was Stewart Wolf, who passed away on September 25th at the age of 91. Often referred to as "The Father of Psychosomatic Medicine", he did groundbreaking research on the role of stress in hypertension, heart attacks, sudden death and peptic ulcer as well as the power of the placebo and a firm faith. His detailed studies of Roseto inhabitants over three decades dramatically demonstrated the cardioprotective effects of strong social support. Many of his publications are still considered classics.

A Glimpse Into The Glory Of Stewart George Wolf Jr.

Stewart graduated from Johns Hopkins in 1938 and pursued his training at Cornell-New York Hospital, where he quickly became a prominent member of Harold Wolff's elite group of pioneers in psychosomatic medicine. His studies on a patient with a gastroesophageal fistula allowed him to directly visualize the effects of emotions on stomach secretions and demonstrated how stress could create an ulcer. He gained international fame following the 1943 publication of *Human Gastric Function: An Experimental Study of a Man and his Stomach*, for which Walter Cannon wrote the Foreword. During World War II, he served as an internist, psychiatrist and consultant in neurology in the Southwest Pacific, where he also directed a 1000-bed hospital. He returned to Cornell to continue his research on the effect of emotions on gastrointestinal function and the phenomenal power of placebos and firm faith in a physician. In one experiment, ipecac, which is used to induce vomiting in patients who may have ingested something poisonous, was carefully administered through a stomach tube to a pregnant woman with no symptoms and quickly produced a feeling of nausea. However, on another occasion, when the same patient was actually complaining of morning sickness with nausea and vomiting and the identical dose of ipecac was administered in the same fashion, her symptoms promptly disappeared simply because Stewart had reassured her that she was receiving a new and very potent drug that prevented nausea.

He was appointed Chairman of the department of medicine at the University of Oklahoma Medical School in 1952, where he subsequently held simultaneous professorships in physiology, neurology, psychiatry, and the behavioral sciences. Over the next 15 years he designed programs to provide more continuity in student education, improve outpatient care and did ground breaking research on the role of stress in heart attacks and sudden death. In the early 1960's, his neurocardiology group was the first to recognize the importance of diminished heart rate variability as a more accurate predictor for heart attacks and sudden death than standard risk factors such as age, cholesterol, HDL/LDL ratios, smoking or hypertension. These findings, based on a ten year prospective study of heart attack patients, were submitted to several medical and cardiology journals but were rejected by all, with one reviewer commenting, "we have known about heart rate for centuries. The authors' findings concerning variability of heart rate could hardly have significant medical

importance". As emphasized in recent Newsletters, low heart rate variability is now considered to be the most accurate and objective method for assessing stress. However, it was not until 30 years later that Stewart was able to publish the complete results of this study in a paper entitled, "Oscillatory Functions Affecting Outcome of Coronary Heart Disease: The Hazard of Too Much or Too Little Stability". In it, he noted that Walter Cannon, in his initial description of homeostasis, had credited the great French physiologist and Nobel Laureate Charles Richet for proposing this principle in 1900, when Richet wrote, "The living being is stable in a sense, it is stable because it is modifiable, this slight instability being the necessary condition for the true stability of the organism." This resilience and ability to adapt to various stresses was necessary in order to maintain what Cannon called the "steady state" or homeostasis as the hallmark of health. Stewart was so disturbed that physicians and researchers were unaware of Richet's seminal contributions to the study of stress that he was determined to correct this by writing his biography. He later spent months in France on several occasions to collate all of Richet's publications and to track down his students and family members for their comments and copies of photographs. These efforts eventually came to fruition in *Brain, Mind, And Medicine: Charles Richet and the Origins of Physiological Psychology*, published in 1999.

Stewart also began studying the people of Roseto, Pennsylvania in the early 1960's after a local physician told him that in sharp contrast to neighboring towns, Rosetans under the age of 60 rarely had heart attacks. Stewart verified this by examining local hospital records and established the Totts Gap Medical Research Laboratories nearby in order to conduct interviews, physical examinations and obtain laboratory studies and electrocardiograms. He discovered that the 1600 inhabitants were almost entirely descendants of Italian immigrants who had settled there 100 years previously and had stubbornly retained all the traditions, lifestyles and beliefs of their ancestors. The elderly were respected and revered and although the oldest nursing home in America was nearby, none of the patients were from Roseto. What impressed him the most was that this was a very close knit, supportive and trusting community that resembled a large family who enjoyed life. Rosetans were warm, generous and friendly, eager to celebrate a first communion, birthday, anniversary, marriage or any other excuse for family and friends to get together in an event that would actively involve those of all ages. There was a strict taboo against ostentation and pomposity so that there were no external trappings such as fancier homes, cars, clothing, etc. that would signal or reflect greater wealth, power or higher social status. Any display of superiority was avoided since this would invoke the curse of the *mal occhio* (evil eye). Despite the fact that their cholesterol levels, cigarette and dietary fat consumption was the same or greater than in neighboring towns, their incidence of heart attacks was dramatically lower. In a 1964 *Journal of the American Medical Association* article, Stewart concluded that this cardioprotective effect was due to their ingrained, stable and supportive lifestyle. He also predicted that as these traditional values and habits began to disappear there would be a corresponding rise in cardiovascular disease.

When the American Institute of Stress established its annual Montreux International Congress on Stress in Switzerland in 1988 to commemorate the memory of Hans Selye, Stewart was the unanimous choice to be the recipient of the first Hans Selye Award. His Award Lecture, entitled "The Scales of Libra, Social Factors That Influence Stress" was a 25-year follow-up of his Roseto research showing that his prophecy had been amazingly accurate. By 1970, it was clear that many of their century-old taboos and traditions had indeed begun to crumble. Cadillacs and expensive foreign luxury cars became increasingly common as did lavish ranch type suburban homes with swimming pools, three car garages and other enhancements. Mixed marriages soared from 18 to 79 per cent and the first two baby boys were no longer uniformly named after their grandfathers but rather for the father, godfather or nobody in particular. New names like Kelly, Allison, Bruce and Lance started to surface. Local shops and eating places vanished as Rosetans joined country clubs

and drove to supermarkets and deluxe restaurants and bistros. Attendance at Men's Clubs functions and the local church steadily declined. It had also become increasingly apparent that aging parents had lost their prime position as elder statesmen whose advice was sought and respected and three or four generations living in the same house progressively disappeared. Over the ensuing years, deaths from heart attacks increased while at the same time they were declining throughout the rest of the nation. The incidence of coronary heart disease more than doubled, hypertension tripled and there was a substantial increase in strokes despite a local decrease in smoking and fat consumption. Stewart explained that this was not surprising since fifty years previously, C. P. Donosson, a physician with extensive experience in black Africa, had noted in his book, *Civilization and Disease*, a complete absence of hypertension, diabetes and peptic ulcer in remote areas of the continent where the social structure had remained remarkably stable. However, these and other of Selye's stress-related "Diseases of Adaptation" rapidly emerged when the intrusion of Western ways and lifestyles subsequently caused a severe disruption of equilibrium and traditional values. As Alvin Toffler had also emphasized in *Future Shock*, "By subjecting individuals to too much change in too short a time, we induce disorientation and shattering stress."

Stewart was an active participant in all subsequent Congresses and was one of the first to point out the fallacy of the prevailing fatty and dairy rich diet → high cholesterol → coronary heart disease dogma and to emphasize the dangers of artificial trans fats designed to preserve the shelf life of foods. His own cholesterol had been well over 400 since his college days and approached 900 during a stressful period when he left Oklahoma to organize and direct the Marine Biomedical Institute at the University of Texas Medical Branch in Galveston to study baroreceptor and dive reflex mechanisms. However, other than the early appearance of arcus senilis, he suffered no ill effects from his elevated lipid levels and never had any symptoms or electrocardiographic evidence to suggest the presence of coronary heart disease. Stewart was always at the cutting edge of medicine and was frequently so far ahead of his time that he was criticized for concepts and hypotheses that seemed foolish or bizarre. As with his conclusions about the importance of heart rate variability, he was eventually vindicated on all counts.

At one of our early Congresses, he delivered a paper on why eggs and fresh dairy products were healthy for your heart because they contained powerful antioxidants that blocked free radical damage, at a time when many people thought that free radicals referred to Communists who had come to the U.S. As noted in a prior Newsletter, a *New England Journal of Medicine* article several years later cited **a well documented case of a healthy 86-year-old nursing home resident with a normal cholesterol and electrocardiogram who had eaten two dozen eggs daily for at least fifteen years because of a food fetish.** Eggs are now recognized to contain key vitamins and nutrients like lutein and iron and to be a rich and inexpensive source of protein and healthy fats. Australia and Canada place no upper limit on cholesterol or egg consumption and Australia's equivalent of The American Heart Association recently awarded eggs a "Heart Tick", the check-mark symbol used to identify heart-healthy foods. Stewart was laughed at when he presented his findings on stress and ulcers to the American Gastroenterological Association since it was only one case. He was later elected President of this prestigious group, which is the oldest medical-specialty society in the United States. He was also attacked for his book and publications on Roseto because they contradicted the establishment view that cholesterol, smoking, and a high fat diet were the major causes of heart attacks. Others complained that it was impossible to prove his conclusions since the study could not be repeated. The Roseto saga is now recognized as a landmark contribution that confirmed the health benefits of a strong social support system.

Stewart was a fastidious investigator with a unique talent for building bridges between basic science research and clinical practice that facilitated his integrative approach to medicine. His interests were diverse and eclectic and ranged from a thorough analysis of what was known about the practice of medicine in Mesopotamia several thousand years ago to the complex mechanisms underlying baroreceptor influences on heart rate variability. "Doctor" means teacher in Latin and Stewart was one of the best illustrations of this definition I ever met. I witnessed an eloquent example when I was invited to be the Stewart Wolf Visiting Professor and featured speaker for the 1999 annual meeting of the Stewart Wolf Society at the University of Oklahoma Medical School. The Dean and Faculty of the Medical School had established this group of previous, present and future residents and faculty members and provided for an annual lecture shortly after Stewart had resigned to continue his research on baroreceptor reflexes and Roseto. Since my visit was more than three decades later, I was amazed not only by the tremendous turnout but the sincere displays of warm affection by numerous friends during the reception that followed my presentation. Even after he left, Stewart regularly invited Oklahoma researchers, technicians, house officers, postgraduate and medical students to visit his Totts Gap facility and farm in eastern Pennsylvania for a week or more to discuss their research interests as well as his own progress with the Roseto research and other studies. He continued for many years to house a handful of promising Oklahoma medical students during their summer vacations and arranged for me and some of his other friends to give lectures on subjects that he thought would appeal to them and open their minds to new possibilities. Stewart persisted in pursuing his interest in medical education because he was particularly concerned about the decline in the bedside teaching of students as well as the lack of intellectual cultivation that seriously impaired their ability to understand why some patients were prone to develop certain illnesses. This led to his 1996 book *Educating Doctors: Crisis in Medical Education*, which provided a thorough analysis of these and other problems that had resulted in a deterioration in the practice of medicine. He also suggested ways that medicine could be restored to the status of a distinguished profession rather than a trade whose goal was perceived by many to be more the pursuit of commercial rewards and fame rather than protecting the patient's interests.

His own approach to treating patients was the epitome of the adage, **"The secret of the care of the patient is in caring for the patient."** He not only conducted himself in this fashion as a physician but in his interactions with everyone. Whether it was a taxi driver he would never see again or a chambermaid at the Grand Excelsior Hotel in Montreux, he always treated everyone with respect and took a genuine interest in his or her well-being. His philosophy, which he frequently expressed, was, **"We all need to develop a generosity of spirit and learn to love one another because people need people, that is the law of nature"**. Stewart was the recipient of numerous honors and awards and in addition to the Gastroenterological Society, also served as President of the Pavlovian Society, the American Society of Clinical Pharmacology and Chemotherapy and the Psychosomatic Society. He authored or edited some thirty books and monographs, published several hundred papers, and served in an editorial capacity for a dozen journals before assuming the editorship in 1990 of The Journal of the Pavlovian Society, which he renamed *Integrative Physiological and Behavioral Science* to more accurately reflect his goals. He unselfishly devoted his time and talent to promoting the careers of others and was largely responsible for obtaining funding for the early studies that confirmed Type A behavior as significant a risk factor for heart attacks as cholesterol, smoking and hypertension. This hypothesis was considered heretical at the time but Stewart had independently identified many of these traits in what he referred to as the "Sisyphus syndrome" in one of his papers. Sisyphus was the mythical king of Corinth who had been condemned by the Gods to spend the rest of his life in Hades where he was compelled to roll a big boulder up a steep hill. However, it always rolled down before

reaching the top and he had to start all over again. Sisyphus is often used to signify involvement in pointless or interminable activities or a persistent preoccupation with work, a prime characteristic of coronary prone Type A behavior.

As emphasized in the conclusion of the Foreword I was asked to contribute to his last book, **Stewart was "A Man For All Seasons"**. This was the expression the great German humanist Erasmus used to describe his good friend, Sir Thomas More. The phrase became popularized by the 1966 Academy Award winning movie with that title depicting More's life and relationship with King Henry VIII. Erasmus was alluding to 1 *Corinthians* 9:22, 'I become all things to all men, that I might save all', when he wrote (in Latin),

"More is a man of an angel's wit and singular learning. He is a man of many excellent virtues; I know not his fellow. For where is the man (in whom is so many goodly virtues) of that gentleness, lowliness, and affability, and as time requires, a man of marvelous mirth and pastimes and sometime of steadfast gravity — it would be hard to find anyone who was more truly a man for all seasons and all men." (*omnibus omnium horarum homo*).

Although the above was written over 500 years ago, it is still a very accurate and particularly appropriate description of Stewart Wolf. He was truly a towering Renaissance figure in stress research as well as 20th Century medicine and we are not apt to see his likes soon again.

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