Letter From the Desk of David Challinor
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My generation (born 1920), called by Tom Brokaw "the greatest generation," was fortunate in a sense to have enormous responsibility thrust upon it during WWII. In retrospect I feel most of us rose to the occasion; personally, my four years in the Navy "made" me the man I was to become. The downside of that experience was clearly the staggering loss of young friends who will forever remain in our memories as the dashing youths they were at their early deaths. This month's letter is about the process of change in life: to what degree we can still recognize the persons we were 20, 30, or more years ago. As an octogenarian I ask now: What have my peers and I lost and what have we gained with age?

With the rapid increase in the aged population, demographers, gerontologists, and other scientists have increasingly studied age-related questions and have discovered some surprising and unexpected answers. For example, many doctors traditionally thought that speed, balance, agility, visual acuity and certain types of memory all started to decline as early as one's twenties. However, testing techniques to determine age-related performances are now more sophisticated than in the past and this "folk wisdom" is simply not true. The time of day at which subjects take mental tests can affect results significantly. Most testing is done in the afternoon, as it is more convenient for both the volunteer subjects and their testers. However, about 75 percent of the elderly being tested think best in the morning. Young students, on the other hand, do better in the afternoon. By testing at the optimum time for each group, previous score differences were halved in tests such as memorizing word lists. Furthermore, the young do better on memory tests when warned of them ahead of time. Advanced notification has the opposite effect on the elderly who, with time to contemplate their supposedly declining memory, tend to become anxious and perform less well than if not warned.

Comparative studies now indicate that character judgement improves with age. This age-related advantage seems obvious, because only through the experience of interacting with many people can one accumulate the insight and awareness of those subtle clues that alert you to both positive and negative messages. Vocabulary and syntax are also generally broader in the old because they have had more practice. In fact, consistent and constant practice is the best way to maintain youthful skills that many think decline with age. Chess is a good example of a skill that can be maintained over many decades, but other skills in even vigorous activity can be retained. Etched in my memory is the squash match I witnessed between the 74-year-old professional Mohammed Khan and an excellent young "class A" player. For those readers familiar with the game, Mo Khan never left the "T" and with unbelievable racquet control dropped irretrievable returns in the forecourt corners. By constant practice he had maintained his "touch" for 50 plus years, capitalizing on his innate talent in order to win a match against a much younger opponent.

Research by Stanford University psychologist Laura Carstensen indicates that the old are generally happier than the young: they endure fewer negative emotions and usually enjoy better mental health. These characteristics are clearly generalities that represent broad averages. Nonetheless, as research on aging and memory increases, the characteristic differences between young and old become apparent. Yet, the latter do just as well as the young when asked to recall important events. For example on 31 May 1972, the Smithsonian celebrated the 100th birthday of Charles G. Abbot, the fourth Secretary of the Smithsonian (1928-44). Abbot had successfully filed a patent application the previous year and still came regularly to his office in the Castle. He worked at the Institution for 78 years. At the celebration of his centenary, he sang a sea chantey he had learned while traveling to the South Pacific on a U.S. Navy sailing ship in 1900. He also described a Congressional hearing 40 years earlier at which he defended the Institution's budget. He illustrated for those attending the ease with which he recalled details that were important to him.

There is no question that short-term memory declines somewhat with age, but this drop can be mitigated with practice. James A. Farley (Franklin Roosevelt's Postmaster General) was legendary for his ability to remember people's names. As a consummate politician, he undoubtedly kept this skill honed. He was alleged to have known 10,000 people by their first names—a number I doubted until my mother, who had met him two or three times at Democratic party gatherings, told me that after a gap of almost a decade without seeing him he had come up to her after church, addressed her by her first name and expressed condolences on the death of my father (whom he named) a few months earlier. Clearly Farley had an exceptional gift, but one he no doubt had to practice continually. Such highly practiced skills can become almost automatic with time. This approach allows the healthy elderly to pick those talents or skills in which they are most proficient and thus maintain a lifelong activity.

Researchers at the Max Planck Institute in Berlin have found that older people generally are better than the young in social wisdom; an ability they have, for example, to give good advice or find reasonable solutions to interpersonal conflicts. Such a marked superiority of this talent in the old derives from incomparably greater experience in exercising it. This ability doubtless accounts for the respect older people generally enjoy in so-called primitive society—a respect that we "more civilized" cultures seem to have lost. If you become wiser with age, but decline physically, does emotional health also decline? Despite perceived impressions, emotional health actually improves with age. This kind of research has led to experiments to test how the old and young view the world. By flashing positive pictures, e.g. birthday parties, and negative ones, such as car accidents, researchers recorded neural activity in both young and old individuals. The brains of the young showed a burst of activity after a negative image, whereas the older subjects responded more strongly to positive images than did the younger subjects. To account for this skewed positive attitude of the elderly, one scientist thought that

many aged kept their feeling of well-being by thinking how much better off they were compared to peers who had died or were bedridden. I disagree with this explanation and believe it is because they can put events into their proper perspective and are not overwhelmed by experiences.

One interesting skill of the elderly that turned up in testing was mental agility with numbers. Those born in the 1920's were far superior to later generations in adding and subtracting two digit numbers. This may be attributed to the practice of learning mathematics by rote, which was certainly common in my own early schooling—especially multiplication tables. Lack of such mental agility with numbers may also be the result of ubiquitous hand-held calculators; students just don't "do" sums, subtractions and multiplications today.

There is reason for optimism about maintaining mental acuity as we age, but it does not come without work. Evidence is accumulating that keeping vigorously active socially, physically and mentally may protect against Alzheimer's. The most recent issue of *Science* (7 Mar. '03, p.1511) reports that aging brains are more robust if the body is subject to regular cardiovascular workouts. Researchers used an MRI to measure brain structure and density of 55 adults (from 56 to 79), and mile-long walks and treadmill tests measured the physical fitness of those tested. The results showed that those who exercised a minimum of 20 minutes daily, five days a week, declined less in brain density in both their gray cell and their axons. Furthermore, the effect of such exercise increases with age. Isolating the reason is difficult, but experiments with rats showed that exercise produced more neurotrophins. These are small proteins that scientists believe get rid of harmful free radicals, thereby encouraging growth in the brain of neurons and their synaptic connections. Thus the elderly may no longer have to worry about an inevitable decline in their mental ability as long as they are motivated to stay active.

We octogenarians are blest to be alive today, because so much new knowledge about the aging process is being generated. Unfortunately, we will not all be centenarians, but we can still squeeze the juice out of life. Recently a retired bishop, a long-time close friend, and I were reminiscing about our boyhood contemporaries who had been killed in WWII. He then speculated that their spirits (or what have you) that might be wandering around heaven would still be young, and he asked how I would respond if St. Peter should ask me what I thought was the best age of my life to spend in eternity? Without hesitation I answered, "Right now!" We laughed and he agreed.

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