The Lady or the Tiger:

DNA Tests Pose Deadly Dilemma

For better, but also possibly for worse, the era of genetic medicine has arrived.

Previously, research and scientific and public attention were focused on a few deadly, but fortunately quite rare inherited illnesses like Huntington’s disease (which killed Woodie Guthrie) and the childhood killer called Duchenne muscular dystrophy.

Discovery of the gene, and subsequent development of genetic tests for cystic fibrosis, broadened the number of Americans whose knowledge and life choices—to become pregnant or not, to have an abortion or carry to term—may be strongly influenced by genetic test findings.

Now, reports that genetic predisposition to some forms of breast cancer and colon cancer can be predetermined, years in advance, mean that everybody has, or soon will have, access to fateful information about themselves and their family members.

Commenting on this “potential darker side of the Genome project,” Boston University lawyer and medical ethicist George Annas said at a recent American Medical Association press briefing, in New York, that DNA “reveals our aging selves to our youthful selves.” People may not “want to know their probability of getting early onset cancer or Alzheimer’s disease,” he said.

It is hard to overestimate how useful, in lifesaving terms, and also how dangerous, in life-threatening ones, this knowledge may be. But it is not clear how ready people, individually and socially, are prepared to confront it.

Policy Decisions Lag

For two decades, ever since the power of DNA analysis to foretell the future—one’s fate—first was foreseen, geneticists, ethicists, and public policy wonks have been conferring and planning a measured phase-in of genetic medicine, under thoughtful ethical and social controls. August bodies have issued stacks of reports and recommendations that say this.

Yet the new era has leapt into being, in the wake of dramatic research discoveries, with scant legal or regulatory control—less, for example, than there might be for introducing a new form of aspirin. The experts now are debating whether it is too late. Has the horse already left the barn?

What is remarkable is that there does not now appear to be any widely acknowledged public policy pathway that could lead to significant ethical or regulatory control.

Of course control may not be needed. But life and death can hang in the balance when key bits of one’s DNA are decoded. So caution, at the least, is in order. Scientists and science
Saying what you mean: We received an informative letter from cardiology researcher Stanton A. Glantz, Ph.D., at the University of California, San Francisco, regarding our doubts about the estimate of 53,000 U.S. deaths each year from second-hand cigarette smoke. Most of these deaths have been attributed to heart disease (PROBE, July, Nov., '93).

In July, we did not cite a paper by Glantz, which we had in hand, that supported the 53,000 figure. Reason: He wrote that the available data “suggested” the link between sidestream tobacco smoke and cardiac deaths. Since “suggested” was no stronger than earlier analyses of much the same data, we thought it redundant. But after our reporting was challenged, we summarized Glantz’ paper, in November, and explained why we initially had not used it. In his letter, Glantz writes:

“In defending your position, you quoted us because we said “These results suggest that heart disease is an important consequence of exposure to environmental tobacco smoke [ETS].” You then went on to make a big deal about the point that we used the word ‘suggest’. This is common scientific parlance for an observed relationship between...a condition and a disease. There is no doubt in my mind that passive smoking causes heart disease in some people [emphasis in the original].”

There is no doubt about that in our mind either. The issue was — and is — how many people. And the broader issue — of clear communication between researchers like Glantz and the press and the public — may be of even greater importance:

Reporters accept that scientists hide behind words to cover their flanks. But there are limits to how far we can go in helping them say, publicly, what they are unwilling to say to their peers.

We can’t write that Glantz “thinks” ETS causes heart disease deaths when the word he chose to use was suggests. We would be roasted for putting words in a scientist’s mouth. Had he used the word indicates, which is midway between, we probably would have cited him in our original article.

In short, scientists need to be more candid and forthright in their reports, both for the public’s and their colleagues’ benefit. They need to say what they mean!

Bioethical blues: We trust that the ethicists are hard at work on profound projects during the brief moments between reporters’ calls asking for an opinion on some new bit of biotechnology. But their response to what is being called the Reproductive Revolution — which offers new ways for infertile women to become mothers — has for the most part been shrill, bordering on hysteria.

For science reporters, the phone call to the bioethicist has become almost as obligatory as political writers’ calls to Bob Dole when the White House says boo. And the ethicists’ opinions have been almost as predictable. So, a reporter can decide whether he or she wants a liberal, conservative, or middle-of-the-road viewpoint, or all three, and dial accordingly.

On the conservative end of the spectrum, Boston University law professor and medical ethicist George Annas, J.D. (whom we cite on P. 1 of this issue) can be counted on to condemn new reproductive methods. New York Times writer Gina Kolata asked Annas for comment on a Scottish doctor’s proposal to transplant ovaries from aborted female fetuses into infertile women, so that they could conceive with the ova. Annas told her the “idea is so grotesque as to be unbelievable (Jan. 6).”

At the other end of the spectrum, University of Virginia bioethicist John C. Fletcher, Ph.D., usually can be counted on for a lower-pitched, more laissez-faire point of view.

In the middle range has been University of Minnesota bioethicist Arthur Caplan, Ph.D. Caplan, though, has been a player in motion of late, moving to the right. Kolata, whose stories have put his name on the Times’ front page at least twice in recent months, reports that he is frightened:

“I never thought that technology would throw the American public into a kind of philosophical angst, but that’s what’s going on here,” she quotes him as saying (Jan. 11).

We, of course, wonder whether it is the public, or journalists like Kolata and ethicists like Caplan who are feeling the angst.

“It seems to me that it would be devastating to grow up knowing you were the product of a situation in which your mother was aborted,” [Caplan] said, “There are many difficult things a child may have to deal with in life, but I just think we don’t have any scale yet for someone to find out that they exist but that their mother did not come into personhood. (Jan. 6).”

But wait: What is the evidence?

For fifty years now, babies have been conceived by artificial insemination (AI), and the question we would ask is: How many have been devastated by discovering that they owe their being to an anonymous college boy, who, for $25 or $100, masturbated into a jelly glass, using Playboy for inspiration?

This of course is how the sperm for AI is obtained. Unless one is sexist, and believes that the mother’s genetic contribution is more valued than the father’s, AI and the proposed transplanting of fetal ovaries into infertile women are roughly equivalent — however distasteful one or both may be to some people. If Caplan can come up with evidence that being conceived by AI blights one’s future, then he will have strong grounds for his current angst. If not, then we’ll side with ethicist Fletcher on this one. He told Kolata (Jan. 6):

“If you take a more adventurous and experimentalist approach, and don’t try to stamp it out before it gets started, you have a chance to see if it does more harm than good.”
Gene Is Linked To Serotonin And To Suicide

The controversial research report identifying a human gene that apparently regulates serotonin levels and physical violence in some people has been published, and a second, surprise finding has been revealed: Men in the research study group who possess one form of the gene have a predilection for suicide.

Neuroscientist David A. Nielsen, Ph.D., of the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and his colleagues here and in Finland, write, in the January Archives of General Psychiatry:

"To our knowledge, this is the first report to implicate a specific gene in the predisposition to a behavior (suicidality) postulated to be regulated by serotonin."

The unusual and homogenous population for the Nielsen study consists of Finnish alcoholic men who were imprisoned for murder and other violent crimes. All were white.

This line of research nevertheless has offended the Congressional Black Caucus and black activists in Washington, D.C. They say that even though the study was done elsewhere, on white people, the findings will be used to stigmatize and control — with drugs or with iron bars — young, black American men.

As we have reported here (PROBE, April, '93), Nielsen and his co-workers at NIAAA and at the University of Helsinki, discovered the gene, called TPH, that appears to regulate the level of serotonin in cerebrospinal fluid and hence in the brain. Higher levels of serotonin, generally speaking, are associated with serenity and calm; lower levels of the so-called serenic neurotransmitter are associated with irritability, anger, and impulsive behavior.

The TPH gene has two variants (alleles), and each person inherits one or the other variant from each parent. Impulsive convicts who had inherited one of the variants, called U, from each parent — so that they were UU — had the highest serotonin levels. Impulsive prisoners who had inherited the alternative variant, L, from each parent — LL — tended to have the lowest serotonin levels. Those who had inherited one U and one L also tended to have low levels of the neurotransmitter.

The suicide data covered both impulsive and non-impulsive criminals. Suicide attempts were rare in men with the homozygote UU gene, more common in those with the heterozygote UL gene, and quite common in the men with the LL configuration. Only 6% of the UU men had attempted suicide, compared to 29% of men with LL.

Commenting on his group's findings, Nielsen said:

"What I think should be emphasized is that we are trying to understand what is causing the self-destructive behavior in the alcoholics — and the research indicates that the TPH gene is important!"

In a related research report, published in the same issue of the Archives, Nielsen's Finnish colleague, psychiatrist Matti Virkunen, M.D., and several U.S. and Finnish co-authors report a second neurochemical trait of impulsive alcoholic offenders: Besides their low serotonin levels, these men also had high levels of the male hormone testosterone.

# # #

This is a fascinating preliminary finding because it ties together genes, a neurotransmitter, and dramatic behaviors: criminal aggression and suicide. The study's implications are not yet clear.

A discovery in an extreme case — men who were so violent and aggressive that they were convicted of murder and other crimes — may or may not have implications for other people. But extreme cases can be informative.

The researchers found the same proportion of LL genotype men in the impulsive and in the non-impulsive prisoners, and also in normal men. So simply possessing this gene configuration does not cause aggressive behavior, absent some other genetic, developmental, or environmental factors.

"I would say," Nielsen commented by phone, "that if you had a bad environment, then the gene would be more important."

The "bad gene," LL, has not been linked to any racial or national group. (No gene for skin color has yet been found.) So it is hard to see how these findings can be used to harm young black men.

It is not clear whether this research will continue to disturb leaders and activists in the black community. We phoned Howard University political scientist Ronald Walters, Ph.D., who strongly opposed this line of study last year, for comment, but we were unable to reach him on deadline; we'll try again for March.

One indicator suggests that opposition to the work is dwindling: Science writer Ronald Kotulak wrote an upbeat, four-part, Page 1 series on serotonin in the Chicago Tribune late last year (PROBE, Jan.). We phoned Kotulak last month, and asked if there had been a negative reaction to his report.

He said that he had received ninety phone calls on the series. Only two of them were critical of serotonin research, and efforts to develop serotonergic drugs for the control of violent and impulsive behavior.

Risk Discerned

"It is interesting that almost all offenders who attempted suicide (34 of 36) had either the LL or UL genotype, independent of [serotonin] concentration. Therefore, the presence of the L allele was associated with an increased risk of suicide attempts."

— D. Nielsen et al., Archives of General Psychiatry, Jan.
A reader chides us for our curt treatment of acupuncture and other Oriental and alternative health methods. He suggests that we interview experts whose purview covers both Eastern and Western medicines.

We have been reluctant to do so. But one such interchange that we had with an acupuncturist, on "Donahue" last November, may help explain why:

The topic was love potions, or aphrodisiacs. Our contribution to the discussion, based on U.S. Food and Drug Administration (FDA) analyses of preparations like spanish fly, don qual, and yohimbine, was that no over-the-counter product has been shown to work; some, including spanish fly, can be dangerous.

Phil Donahue then introduced the acupuncturist, Felice Dunas, Ph.D., of Los Angeles. He said she was one of the first non-Asian practitioners in the U.S. She has been treating patients for almost two decades, and she said that they are very satisfied with her treatments.

Dunas brought with her to the New York TV studio a Los Angeles patient, Ms. Jane Deknatel, and proceeded to demonstrate her method, on camera. She inserted a handful of ultra-thin Japanese acupuncture needles into Deknatel's belly. There was no blood, and Deknatel said there was no pain.

A viewer called to ask, according to a transcript of the show: "How long have you been undergoing acupuncture treatments, and ... has your sex drive [gone] up since then?"

Deknatel: Yes to all of the above. I’ve been having acupuncture weekly for three years, and I got married three years ago, after having been single for 18 years.

Donahue: And you found this a very liberating or, how shall we say, enhancing experience?

Deknatel: Yes, completely.

Deknatel was clear that her televised treatment made her feel better and erotically aroused. But Dunas stipulated that the treatment was not aimed specifically at "jump-starting" Deknatel’s libido — which is what one might think a love potion or sexual stimulant would do. "Rather," Dunas declared "my underlying theory is [that] the body needs to be very strong to feel sexual desire. If it is not strong ... we won’t be ... desirous. So if we can keep the body healthy, then we are able to maintain our sexual interest level."

Clearly, the therapy has an effect — perhaps that of relieving tension, or anxiety, thereby liberating the patient’s repressed sexuality. But it is unclear how much of that effect is due to Dunas’ putting in of needles and how much to her laying on of hands.

The ancient Chinese developers of acupuncture appear to have found a way to induce the production or the uptake into nerve cells of pleasurable neurotransmitters called endorphins, and perhaps some other such biochemicals. What is less clear is whether acupuncture or other Chinese remedies are effective — and safe — against the conditions and illnesses for which they are used.

Later in the program Dunas did a brief show-and-tell on Chinese medicaments "that have been used as aphrodisiacs for literally thousands of years." These included dry seahorses, and thin slices of deer and antelope horns. We asked:

"Why is [this] useful for an aphrodisiac?"

Dunas: "... [Y]ou make tea out of these ..."

Donahue: Tea?

Dunas: "You take several of these in combination, and teas are made. Now, unfortunately, I don’t have enough proof because, from the Western scientific perspective, we haven’t done the research necessary to prove that these work ..."

Us: "Don’t you think you ought to do that first?"

Dunas: "No, because ... your medical model is not the only medical model that has been used on the planet, and not necessarily should it be."

Fair enough! But, as in most such conversations between science reporters and alternative practitioners, Dunas’ reply leaves unanswered the questions of whether, how, and why these remedies work. It also leaves unanswered whether these methods are as effective and as safe as scientifically proven drugs, such as the endorphin-inducing benzodiazepine tranquilizers like Valium and Xanax. And, in the era of Clinton health care reform, one also would like to know if the remedy is cost effective, vis-a-vis other options.

There is no meeting of minds on these matters — which is why, in response to our reader’s complaint, we find it substantially fruitless to interview Eastern practitioners, as the Donahue exchange shows.

Rephrasing Kipling’s "and ne’er the twain shall meet," Donahue said to Dunas: "So, in other words, you shouldn’t use a Western barometer to determine an Eastern remedy."

Consumer Reports Offers A (Somewhat) Pointed Assessment

Consumers Union, which has been uncritically enthusiastic about alternative health methods in the last year, may be tightening up just a little bit. Its product rating magazine Consumer Reports is running a three-part series that promises "the facts" about acupuncture, homeopathy, and chiropractic.

The acupuncture article (Jan.) provides tips on how to obtain acupuncture. It concludes:

"There is some evidence that acupuncture may be useful in controlling pain, controlling nausea and vomiting, and treating alcoholism and drug addiction. But the evidence for these benefits is limited and far from conclusive — and controlled research on acupuncture’s other uses is almost nonexistent [Emphasis added]."

The article adds: "There is also no comprehensive theoretical explanation — in terms of Western medical principles — for acupuncture’s apparent effects."
Reporter's Book on 'Baltimore Affair' Is Informative, But Critically Flawed

The origins of the confusing and still unresolved "David Baltimore Affair" have become lost in a muddied past. A half dozen books are in progress that will refresh our memories — and retest our judgments.

The first of these tomes, Judy Sarasohn's *Science on Trial* (New York: St. Martin's, 1993, $23), is of signal value:

Ms. Sarasohn, an editor at *Legal Times*, in Washington, D.C., has written a clear, informative account of the case, making good use of the voluminous documentary evidence, as well as interviews with major players, including Nobel prize winning biochemist David Baltimore, Ph.D., his co-investiga-

The book was being written by microbiologist Bernard D. Davis, M.D., of Harvard. He died last month at the age of 78, of prostate cancer.

When we last spoke to Davis, in the autumn, he said his manuscript was progressing, but the illness was flagging his strength — and he doubted he could complete his task. Earlier, Davis had said:

"The heart of this tragic case is that these people [Imanishi-Kari, Baltimore and their co-authors] encountered some radically new and speculative immunologic findings . . . [that] did not fit into the classical expectations . . . They had the misfortune to have a very concerned, idealistic, intense post-doc [Margot O'Toole]. She didn't like to live with uncertainty — and couldn't feel comfortable unless the data fit into her preconceptions about how they ought to be" (PROBE, Aug., '92).

Several reasons led Davis to doubt that Imanishi-Kari faked her data in the famous *Cell* paper. One reason was that a scientist who had done so would hardly be dumb enough to put his or her next post-doc onto the same project. What is more, Davis said, defrauders tend to advance a single, clear-cut conclusion, not the "maybe it's this, and maybe it's that" of the paper in *Cell*. Finally, frauds tend not to advance a conclusion that already has been rejected by their peers — they say what their colleagues want to hear. But Imanishi-Kari challenged her peers.

Bernie Davis was an early subscriber and strong advocate for PROBE. We miss him! — D.R.Z.

Unwritten Pages . . .

One book on the Baltimore affair may never be finished.

This is too bad, because it was likely to have been the strongest in defending scientific and intellectual freedom from political and ideological harassment. It thus might also have been the strongest in support of David Baltimore and his still embattled colleague, Theresa Imanishi-Kari.

The book was being written by federal investigator Suzanne Hadley, a psychologist, that was leaked to the press, but has never been completed or issued by any agency. Both Hadley and her document were repudiated by her boss, the National Institutes of Health chief Bernadine Healy, M.D. As we have reported, Hadley's indictment is fatally flawed (PROBE, Nov. '91). Sarasohn sort of acknowledges this, but nonetheless buys its conclusions.

She fumbles some of the key questions in the case. Noting that (as we have reported) a number of researchers have replicated experiments in the *Cell* paper, as has Imanishi-Kari herself, Sarasohn nevertheless endorses Hadley's accusation that "possibly accurate results would not excuse fraudulent experimental work: It doesn't matter if the answers are right if you make up the experiments" (p. 269).

This displays Hadley's and Sarasohn's misunderstanding of science: Working at the arcane, cutting edge, as Imanishi-Kari was doing, it is virtually impossible to come up with the right answers— that is to say, answers that others can and do replicate — on the basis of a bogus experiment. It can't be done. The findings are too specific. Conversely, if others can replicate the findings, then the original experiments cannot have been bogus. They are science.

These misunderstandings have been a key flaw, all along, in the attacks on Imanishi-Kari.

Sarasohn claims, as did Imanishi-Kari's earlier detractors, that others have confirmed some parts of Imanishi-Kari's findings, but not all of them. She notes that a new report, which was in press at the same time as her book, also has "confirmed aspects" of it.

But this new paper, by immunologist Alan M. Stall, Ph.D., at Columbia University, which was published in the journal *International Immunology* (Vol. 5, pp. 10011-10022, Sept. '93) does more: "In our analysis," Stall and his co-workers write, "we have confirmed most of the findings originally reported" by Imanishi-Kari and colleagues in *Cell*.

*Science on Trial* is must reading — fascinating reading — for those who wish to understand the Baltimore affair. Unfortunately, Sarasohn's central conclusion is wrong.
Nicotine Is Finding a Medicinal Use

Nicotine, and the cigarette smoke that usually comes with it, certainly are bad for most people's health. But is nicotine all bad? Well, no.

Pure nicotine, delivered by one of the nicotine skin patches that are prescribed as stop-smoking aids, appears to be medically beneficial for a small group of profoundly distressed people: sufferers of Tourette's syndrome.

Tourette's is a neuropsychological disorder. Its sufferers, mostly males, have severe tics: They make sudden and involuntary twists and jerks, head thrusts, hand claps, and jawing movements. They bark like a dog, or make other bizarre sounds. Typically, Tourette's patients are profane. They frequently blurt out the word "shit," or its equivalents — a symptom called coprolalia.

Neither cause nor cure is yet known. But Tourette's does respond, partially, to drugs that block brain cell receptors for the neurotransmitter dopamine (neuroleptics); haloperidol (Haldol, Janssen) is a standard. These drugs, however, have significant side effects: They make some users feel like zombies. Similarly, rats dosed with haloperidol are temporarily immobilized.

**Effect Is Studied**

This untoward effect has turned out to be useful for researchers. Several years ago, neuroscientist Paul R. Sanberg, Ph.D., who works at the University of South Florida, in Tampa, was studying the interaction of dopamine and a second neurotransmitter, acetylcholine; the latter is influenced by nicotine. Sanberg found, to his surprise, that when he gave rats haloperidol and nicotine, they were immobilized for significantly longer than when he gave haloperidol alone. The nicotine, in other words, seemed to boost, or potentiate, haloperidol's effect.

This result seemed "hard to believe," Sanberg said recently in a telephone interview. "So we replicated it a few times" — and it continued to work. "We thought, 'What is a disorder for which you give haloperidol, but in which the response may not be complete?'"

Answer: Tourette's.

"Basically," Sanberg said, "we went right from rats to people — which is probably rare."

**Nicotine Gum Prescribed**

To provide the nicotine, he and his colleagues gave young Tourette's patients nicotine chewing gum (Nicorette, MMD), under an experimental protocol. Their tics abated or vanished for a few hours. But the kids disliked the gum's taste. Worse, ingesting nicotine via the gastrointestinal (GI) tract causes nausea and other GI distress.

The newer, nicotine patches, which bypass the GI tract, reduce these side effects. So Sanberg and his co-workers have used them experimentally on several young patients, with some dramatic results (Lancet, July 17, '93, P. 182). In one case:

A 10-year-old boy presented with severe eye blinking, head turning, finger snapping, sniffing and grunting, occasional coprolalia ... and severe hyperactivity. He had not responded to haloperidol daily. Within an hour of application of a 7 mg nicotine patch, his hyperactivity subsided, and within three hours the coprolalia had gone, and his tics had subsided to within 25-50% of the pre-patch frequency. Twenty-four hours after removal of the patch, his symptoms remained under control.

The best news was that the benefit endured in one patient for two months. The nicotine clearly relieves some profound neurochemical deficit.

Would nicotine from cigarettes also relieve the symptoms? It "could," Sanberg said, reluctantly, adding that there is nothing in the scientific literature to support this possibility.

Neuroscientist Sanberg and his colleagues now are testing nicotine patches on additional patients at a special Tourette's clinic in Tampa. They hope to prove the method works in a double-blind study that will meet FDA requirements for adding Tourette's as an indication for nicotine patches.

It will be interesting to see how effective this counterintuitive use of nicotine turns out to be.

---

**Tourette's Talk**

The first — and only — Tourette's sufferer we've ever met was an aging, unkempt hitchhiker whom we picked up one afternoon many years ago in the Midwest. He'd been drinking.

He talked a lot, and he cursed a lot. Most unforgottably, he punctuated almost every other sentence with the expletive:

"Eat a bird turd, baby!"

We couldn't imagine, then, why the man was so wed to this phrase. And we were not too sorry to see him get out, when our ways parted some miles down the road.

Only years later did we realize that the hitchhiker's obsessively repeated phrase almost certainly was a manifestation of Tourette's syndrome.

Not all Tourette's sufferers are down-and-outers: Many are and struggle to stay in the middle class.

---

**Helix . . .**

continued from page 1

them. Helix keeps track of which labs perform which tests, Covington said last month by phone. Some tests are offered by only a single laboratory, which may be in a hospital or research facility; others are commercially available. The information is free. Queries are answered by phone or FAX.

Covington said she is Helix's only full-time worker. Hence, she explained, she can answer professional queries, from genetics counselors and physicians. But she said she cannot handle questions from the general public for want of time.
Contrasting Ways to Build DNA Test Public Policy Are Listed

Evidentiary Model
- Clinical studies
- Analysis of clinical studies
- Evaluation of normative issues
- Professional and public consensus defines standard of care
- Standard of care drives utilization and reimbursement

Extemporaneous Model
- Market, professional practice, legal, and consumer forces drive utilization and reimbursement
- Utilization and reimbursement define standard of care
  — Wilfond & Nolan,
  in JAMA (Dec. 22/29)

DNA Tests... continued from page 1

writers have a stake in research progress, however cautious they may be — and they now are struggling for balance. But this information may not be balanceable on an individual basis:

Writing in the Wall Street Journal (Dec. 8) under the accurate and carefully balanced headline, “Dire Prophecy: New Test Tells Whom a Crippling Disease Will Hit — and When,” reporter Marilyn Chase leads with an account of a 21-year-old college senior who wants to take the test for ataxia, a crippling and eventually lethal brain disease that runs in her family.

“I want to be tested before I start showing symptoms,” she says unflinchingly. “I’m graduating in May, and I have to start planning my life.” As agonizing as the knowledge might be, she says, the uncertainty is worse. “If I’m in limbo, it’s not fair to people around me... I can’t deal with not knowing.”

Far down in the story, however, on the jump page, writer Chase describes the wicked edge of Damocles’ sword: A physician, using earlier, less-precise information, told a gifted young musician that he probably would develop ataxia.

“Still healthy, the youth took it stoically, then later fired a gun into his chest,” Chase reports.

For an individual who is contemplating testing for familial ataxia or Huntington’s, there now are no medical interventions that might significantly mitigate or palliate bad news. As in the classic short story “The Lady or the Tiger,” the result can be either — or (See box, p. 1). Or, what could be worse, it may seem to be either/or, when, scientifically, it is equivocal.

These tests are accessible through physicians and genetics counselors; the latter are specially trained and informed about the tests, and their interpretation, and they should obtain an individual’s informed consent before proceeding with the tests (See story, p. 1).

What criteria can the individual use in deciding?

Standards Sought

One much discussed, but unpromulgated standard:

Is there a meaningful medical intervention in case the test brings bad news?

This can be seen as a common sense determinant of whether a doctor should offer, or a person should ask for or consent to a genetic test. But it is hard to quantify meaningful in this kind of cost/benefit calculation. In fact, few such interventions are now available.

What is more, what may be meaningful to one person — repeated physical exams, for example, to look for predicted early cancers while they still are operable — might not be meaningful to someone else. He or she might feel that only the possibility of a cure would justify taking the test.

This may be one reason why bioethics panels that have explored the consequences of genetic testing appear not to have stipulated ‘meaningful intervention’ as a condition for genetic testing. Pediatrician Benjamin S. Wilfond, M.D., of the University of Arizona, in Tucson, and a colleague recently listed, in the Journal of the American Medical Association (Dec. 22/29) several principles for genetic diagnosis. These principles are based on a consensus that includes the Hastings Center, the bioethic think tank in Briarcliff Manor, N.Y., the National Academy of Sciences (NAS), in Washington, D.C., and a President’s Commission that studied these issues a decade ago.

Informed Consent Required

All three expert bodies require a person’s informed consent before any test is performed, Wilfond reports. They do not require the availability of a meaningful medical intervention.

But, in a phone interview Wilfond said that a recent report from the Institute of Medicine (IOM), an arm of NAS, makes the point that genetic tests must benefit both individual patients and society. He said:

“Certainly there is a precedent for asking the question about whether there are interventions that can be helpful.”

Wilfond added:

“The issues of intervention are much more important for children, and how these tests should be applied to children.”

Adults, he noted, have a sense of how to avoid bad news: In... continued on next page

Cancer Gene Identified

Mutations in a human gene called p53 can be found in half of all cancer patients. Normally, p53 appears to repair damaged DNA that leads to cancer. But mutations prevent the gene from performing this protective function — allowing cancers to develop, according to Science (Dec. 24), which named p53 its “molecule of the year.”

The status of the gene — normal or mutant — may be a powerful predictor of a cancer patient’s fate; it may foretell future cancers. The hope is that the normal and protective protein that p53 makes can be identified, and provided, medicinally, to prevent or halt a cancer’s growth.
DNA Tests . . . continued from preceding page

one study, several years ago, seventy-five per cent of people at risk for Huntington’s disease said that they would like to have the test. But only twelve per cent showed up to take it.

Wilfond acknowledged that there is as yet no national advisory body that might influence the deployment of genomic information into genetic tests. He and his JAMA co-author, pediatrician Kathleen Nolan, M.D., of the Hastings Center, distinguish sharply between evidentiary and extemporaneous models for the development of health policies such as DNA testing (See box, p. 7). The former is planned and disciplined, akin to the Food and Drug Administration’s approval process for new drugs. The latter expresses market forces: When a new test or other technology is developed, if it is potentially profit-

able then it will be made, sold — and used.

Given the present disarray in U.S. health policy development, it seems likely that technological ability and the marketplace at least initially will determine the availability of genetic tests.

# # #

A person’s decision to seek genetic testing may be very difficult and dangerous. It may be much easier to avoid bad news than to grapple with it, once in hand. Since the individual is, or certainly should be, the final arbiter of whether a genetic diagnostic test is conducted, we think great caution is called for. We doubt that we would want to have, say, a Huntington’s gene analysis unless and until we knew there was an effective drug or other therapy available in case of bad news.

second fold

"VICE PRESIDENT Al Gore envisions an America where poor children sit in front of a television, tapping information from the best libraries in the countries," said a N.Y. Times editorial (Jan. 17), "Mr. Gore's Video Vision." It’s an America "where physicians examine patients hundreds of miles away; and where everyone calls up a vast array of newspapers, movies, and encyclopedias at the flick of a TV controller."

Says the Times: "It’s a worthy vision."

Say we: It is not.

It is the kind of vision that might please a media company like the Times. But it aggravates two serious problems in our society: human isolation and information glut.

What do we propose instead? Much more face-to-face living between students and teachers, doctors and patients, and all couch potatoes. And, less data, but more thinking about what these data mean.

THE CLINTONS’ HEALTH PLAN will give major insurance companies enormous profits and power. The Prudential Insurance Company of America, meanwhile, is under harsh government scrutiny, and has admitted civil liability, in the billions of dollars, for consumer fraud perpetrated over many years by its Prudential Securities division. These admissions, and the still unfolding scandal suggest that Prudential can’t be trusted. Do the Clintons — and do we — want to vastly increase Prudential’s role as a carrier of Americans’ health insurance plans?

INSURANCE can help: Internist Allen Keller, M.D., of New York University has been in Phnom Penh, for the American Refugee Committee, to start a human rights education program for health professionals. But Cambodia still lacks malpractice insurers, Keller recounts. One practitioner gave a woman a vitamin injection of dubious worth. Worse, a serious infection developed at the injection site. Her family, in anger — and unable to sue — burned down the practitioner’s house.