

## **DOES YOUR DNA BLEED BLUE?**

### **GENETIC SCREENING OF POLICE OFFICER APPLICANTS**

By: David F. Sears

Futurist Joel Barker once said, "The new rules are written at the edge." With this in mind, police executives should develop and fine tune emerging opportunities to do our jobs better and easier. One of the most significant challenges faced in policing are ways to find the best qualified employees. So, how do we define what "best" might be, and how do we hire them? Rather than relying on mere performance tests or other subjective instruments to select our newest members, are there opportunities to objectively determine who is best suited for the rigors of policing, and can we use them to ensure the unfit do not carry a badge?

This question was the basis for research conducted to assess the potential use of genetic screening to identify predispositions for specific diseases and psychological disorders as a part of the medical screening process for prospective police officers. In this envisioned future, genetic screening would supplement the current medical screening guidelines developed by the California Commission of Peace Officer Standards and Training (POST). The primary challenges are how to apply a genetic screening test using emerging technologies, and then how to implement a fair and prudent policy regarding its use. Of course, agencies would also have to deal with the expected political fallout and legal issues of assessing fitness based on genetic markers. The personal privacy implications of using DNA might lead some to act decisively to prevent what they would see as an Orwellian future where only the "superior" survive.

Currently, POST uses a board of medical professional to establish and update physical guidelines for employment for Peace Officers. This board of medical professionals would have to tie the genetic screening to current physical guidelines. If the use of genetic screening, however, allowed the police to hire the most suited applicants and minimize the adverse impact of the actions of the unsuited who now may pass through existing screening systems, can we afford to ignore a means by which we could literally reshape the face of those who protect and serve?

### **Current Testing Standards**

The State of California administers the selection and training of its 25,000 peace officers through the Commission on Peace Officer Standards and Training (POST). In addition to managing 39 police academies, certifying and setting standards for the 536 police agencies, POST establishes guidelines that police and sheriff's agencies must follow to ensure police officers candidates meet rigorous standards before becoming eligible for hire.<sup>1</sup> These guidelines are outlined in the POST Administrative Manual (PAM), and the POST Medical Screening Manual for California Law Enforcement.<sup>2</sup> As one might imagine, the established guidelines vary greatly from those applying to most any other profession.

In police work, medical screening standards include a battery of tests for the following; cardiology, dermatology, endocrinology, gastrology, hematology, oncology,

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<sup>1</sup> California, Commission on POST Administrative Manual, Section C, (2004)

<sup>2</sup> Ibid.

infectious diseases, musculoskeletal, neurology, respiratory, vision guidelines, and hearing guidelines.<sup>3</sup> If an applicant does not meet the standards, the hiring agency may give a conditional offer of hire that would require the future employee to have the medical conditional corrected prior to starting work. An example would be an applicant with a vision problem may use eyeglasses or get corrective surgery to meet standards. If technology were able to give the ability to screen for certain maladies, would law enforcement administrators be able to incorporate this tool into the medical testing process, and would it be a means suited to ensure public agencies hire only the best for these critical positions?

### **The Technology:**

In 1998 the National Human Genome Research Institute first published an opinion paper for the Departments of Justice, Labor, Health and Human Services, and the Equal Employment Opportunity Commission entitled "Genetic Information in the Workplace". The original report and its 2004 revision identified genetic screening as, "a test to detect general heritable conditions that are not associated with workplace exposures."<sup>4</sup> The reports prompted the question, *What is the potential to use genetic screening technology for peace officer selection, and how it can be compared to the effectiveness of current health screenings in the workplace?* This is the idea of taking current health screenings can be improved with the addition of genetic screening.

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<sup>3</sup> Medical Screening Manual for California Law Enforcement, Commission on POST (2001)

<sup>4</sup> National Genome Research Institute, *Genetic Information and the Workplace* 1998, accessed September 6, 2004; available from <http://www.nhgri.nih.gov/10001732>.

Beyond the technological hurdles, a central challenge that will be faced is in the ethics arena. How will the idea of genetic screening as an employment tool play out with the ethical dilemma of present ability versus possible future disability hanging over this discussion? The employer has an ethical obligation to hire someone who is qualified for the job. That can include physical requirements, and if a genetic screening indicates an employee is not or will not be capable or “qualified for the job,” then the employer is obligated not to hire them.

On the other side of the debate is the idea of fairness. Is it fair to disqualify someone who may be unqualified because of a potential future physical disability? These questions are fodder for future debate, but are nonetheless important considerations as an executive contemplates adopting a screening tool that some would say is merely a scientific attempt to read the tea leaves of the future.

The possible future of genetic screening is being played out in the research arena today through preliminary discussions among scientists and academics. One possible future beyond the capability to screen for genetic issues is the actual altering of one’s DNA. Dr. W. French Anderson<sup>5</sup> presented the idea of somatic gene transfer experiments, the science of altering a genetic defect to correct a disease. This concept was first presented to the National Institute of Health’s (NIH) Recombinant Advisory Committee (RAC) in 1990. They in turn presented the thesis to the academics in this field of study and research. By 1999, overwhelming opposition had been recorded to the RAC, and they

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<sup>5</sup> Center for Genetics and Society, *In Utero Somatic Gene Transfer*, 2004, accessed September 6, 2004; available from <http://www.genetics-and-society.org/analysis/promodeveloping/anderson.html>.

issued a unanimous agreement that it “is premature to undertake any human *in utero* gene transfer experiment.”<sup>6</sup> This theory may be a future goal of Dr. Anderson, but there are many concerns of ethics and religious professionals about crossing some acceptable line of going too far.

Additional thoughts and ideas in the envisioned future come from the Buck Institute of Marin County. They are conducting genetic research to eliminate Alzheimer’s disease, taking an innovative approach of working directly at the level of genetic structure after identifying Alzheimer’s as a genetic disease. The Buck Institute is working to change or correct the DNA structure so individual cells do not produce proteins that cause the brain to decay, which may retard or actually eliminate the onset of the disease. The Buck Institute is well on their way to developing interventions into genetic manipulation, having already conducted research on basic cellular life forms such as worms. According to the Institute, the worm is the most basic form of life for which they can work on the genetic structure and have a potential nexus to future genetic work on human beings. Future challenges will be faced when researchers look to take their genetic manipulation to the human side of research.<sup>7</sup>

### **Opposing Positions to the Use of Genetics**

Opposing arguments to dabbling in the basic structures of life is promoted by groups concerned with an amoral quest to “do” something without considering the question of whether or not we should attempt to “play God” with human life. The

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<sup>6</sup> Ibid.

<sup>7</sup> The Buck Institute, *Basic Mechanisms of Aging*, 2004, accessed September 6, 2004; available from <http://www.buckinstitute.org/main.aspx?id=744>.

Council for Responsible Genetics (CRG) has been very active in monitoring and giving input into legislation that will control genetic research. Their philosophy is:

*“The CRG and other reproductive health and women’s groups, as well as many social conservatives, oppose all forms of embryo cloning for ethical, health, safety, or moral reasons.”*<sup>8</sup>

When discussing the topic of genetic screening with other law enforcement and business professionals they voice concerns similar to those of the CRG, noting the potential for cloning as science opening Pandora’s Box. The CRG looks at genetic screening as a slippery slope towards genetic manipulation, which the CRG regards as immoral.

The CRG is very active, and influential at limiting the role of science in the genetic field. They are concerned with sciences’ involvement in cracking the genetic structure whether it is for research, genetic manipulation, stem cell development or human genetic cloning. Currently, the CRG is tracking legislation that has become a political hot button for the United States Congress. HR 2505 or “The Human Cloning Act” bans any form to clone human embryos and closely limits genetic manipulation for humans.<sup>9</sup> The CRG takes a political approach that no member of Congress wants to be known as “one of the cloners”. This is why there seems to be an impasse of a total limitation on genetic manipulation.<sup>10</sup>

### **The Economics of Hiring the Wrong Person**

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<sup>8</sup> Doug Hunt, *The Cloning Landscape: Pending Legislation*, 2002, accessed September 6, 2004: available from <http://www.gene-watch.org/articles/15-31landscape.html>.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

The real challenge to incorporate genetic screening into the testing process is to avoid the religious argument and look at the facts. One such fact is the economic model. We need to justify the cost savings in predictable health care costs or workers compensation costs. For example, In the city of Petaluma, California, a suburban community of 50,000 north of San Francisco, an average of 8-10 percent of the Police Department's budget is spent on worker's compensation claims. This cost equates to nine full time police officers that can be trained and equipped for patrol.

As taxpayers, we need to ask if there is a way to reduce this expenditure and direct this money towards better service. Another solution along the economic model is if a genetic screening identifies a predisposition to a disqualifying disease, the employer can require the applicant sign a waiver absolving the employer from any liability of future disabilities related to the identified genetic defect.

### **A Survey of Experts**

To provide diverse viewpoints for study in this research, a nominal group technique (NGT) was used. An NGT is a diverse group of persons with relevant knowledge who are asked to help provide perspectives on a topic under study. Those assembled were professionals representing the following fields: Human Resources, Civil Rights Attorney, Law Enforcement Administrator, Municipal Insurance Claims Administrator, Newspaper Editor, Hospital Administrator, Chaplain, Union Member, Municipal Attorney, and Social Services Manager. The NGT discussed the feasibility of using genetic screening as an employment technique for future employees in law

enforcement. The dialog was diverse and challenging, with a number of tangential issues entering the discussion of the day. Some felt the premise of the study was too overbearing and intrusive, which hindered the progress of discussions.

Once focused, the group began its work to forecast possible trends and events that might impact this topic. The group could foresee DNA screening having an impact as a pre-employment selection tool. The trends and events were then subjected to a matrix or cross impact analysis. There were some common themes that were generated from the analysis that helped in possible future implementation planning.

### **Common Themes**

I was impressed how the NGT panel was able to see how this tool could be utilized in other manners, and how it could be utilized for the wrong reasons. The wrong use concerns were consistent with those objecting to genetic manipulation, and the possible use of genetic profiles outside of law enforcement hiring, such as to populate a database for use in the insurance industry. The panel did see the medical benefits to be realized in the health care industry, especially in preventative medicine and the diagnosis of genetic diseases. The panel was more focused on the potential misuse and their personal biases rather than the issue. Once they became focused on the topic as a screening tool then they were able to make headway. Their concerns were helpful when considering an implementation plan.

The NGT panel did believe there would be huge hurdles to overcome to implement the use of genetic screening for employment purposes. The idea of disqualifying a potential applicant because of a predisposition did not sit well with the NGT panel, who also felt court intervention into adverse hiring decisions was a significant issue. They argued the point that some genetic issues can be controlled through a healthy lifestyle of good diet and exercise. These dilemmas with which the NGT panel struggled paralleled the thought put forward by Joel Barker in the beginning of this essay that, "The new rules are written at the edge."

### **Implementation**

The planning of a strategy is challenging. Should the technology mature, and a city elect to pursue the use of genetic screening, there will still be a number of sensitive factors to consider before testing the first candidate for hire. Given the potential controversy associated with this screening tool, the implementation would need to begin by soliciting the involvement and support of professionals in the analysis and development phase while remaining aware of progress and changes in the use of this technology.

The process of taking the thoughts, ideas, and programs into action is implemented through the Strategic Planning Process, which is necessary to ensure the analysis and implementation of the desired end state is accomplished without also generating surprises or unanticipated outcomes. In this instance, the Strategic Plan also helps to minimize uncertainty and lessen anxiety about the use of DNA information in the

police hiring process. Beyond planning, the actual transition to the desired future also requires a formal execution of intent. That is accomplished through the Transition Plan.

### Commitment to Change

Our job as change agents in our transition management is to make the recipients of change as comfortable and secure as possible. We must be able to encourage all participants that continuous change is good, and they are valued stakeholders in the process.<sup>11</sup> There can be numerous people involved in the transition, and we must decide how to make change. Which model will be most suitable for our transition to using genetic screening in the hiring process for police officers? How do we do this?

There are three types of transition change. They are developmental, transitional, and transformational.<sup>12</sup> The developmental model is when the focus is on teaching a new skill or a focus on improving a job skill.<sup>13</sup> The transitional model is when the focus is changing what exists and to implement something new.<sup>14</sup> The transformational change is creating a totally new state of being.<sup>15</sup> Since we are looking at supplementing the current hiring process with a new tool, the best transition model to use would be the transitional change. For example, there is a current screening model in place. The transition model will merely be supplementing the current screening process with an additional test of genetic screening.

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<sup>11</sup> Todd D. Jick (1990) Harvard College, Harvard Business School case N9-491-039, page 332

<sup>12</sup> Linda S. Ackerman (1986) Development, Transition, or Transformation / The Question of Change in Organizations, OD Practitioner, p.45-46.

<sup>13</sup> Ibid.

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

In the transitional model there are three phases experienced by parties to the intended change. In these phases, the change starts at the old state, proceeds through the transition state and arrives at the new state.<sup>16</sup> During the transition or implementation phase, there should be little chaos because of a transition to a known new state allows for comfort level and less resistance. To help ease the transition, it is wise to include stakeholders as an educational phase to allow more knowledge on the known new state and less uncertainty. We need to avoid and keep clear of unrelated topics such as cloning and genetic manipulation. To help minimize uncertainty, every stakeholder has to know their responsibility in obtaining the transition. The goal in the transition is to work smarter and better. We need to keep it simple.

The challenges of implementation will be how to give the tool of genetic screening credibility and value? How do we keep clear of clouding the idea with science fiction fears? Who is going to be the first test agency? The answers are with the science. If we can utilize the experts and avoid fallacious information that generally comes from Hollywood stereotypes such as in the movie "Gattica" we can educate the public and demonstrate the true accurate successes. Unlike "movie genetics," actual science will dispel fears and assure those using the testing process (and those who will be tested) that it is based in sound theory. Before we implement the change or transition to the change, we have to identify the action roles associated with the implementation.

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<sup>16</sup> Linda S. Ackerman (1986) Development, Transition, or Transformation / The Question of Changes in Organizations, OD Practitioner, p.47

As the word implementation indicates, it is now time for action and we have to identify action roles. There are three basic action roles to move our thesis out of the planning and strategy phase and into the action phase of implementation. The roles are change strategists, change implementers, and change recipients.<sup>17</sup> The change implementers are the ones who will make the change happen. The change implementers will be the policy makers, the leaders.

For the most successful implementation of using genetic screening as a hiring tool for police officers, the process has to be the least intrusive, unsettling manner. Will providing a genetic code be comparable to blood type, a physical description or your true hair color? Too many peripheral parties such as lawyers, labor lobbies and the legislature can easily cloud the issue when the topic starts to get muddied by politics or bad media coverage. The topic can also be too easily distorted or associated with a controversial action such as cloning. The best implementation model, therefore, would be to use the strong selling point as a screening tool only. It can be compared to a current tool like cardiac stress tests or polygraphs. Finally, we have to look at the science as it is already being used. In Seattle Washington, Genelex Corporation is already marking a home genetic health screening to the public.<sup>18</sup> This kit can help identify predisposed genetic illnesses. It brings the science more towards the level of taking one's own temperature or blood pressure, and may be a subtle pathway to the acceptance of genetic screening on a larger basis for hiring public safety personnel.

### **Success Evaluation**

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<sup>17</sup> Todd D. Jick (1991) Harvard College, Harvard Business College case N9-491-114 p. 192.

<sup>18</sup> Ariana Cha, "Lab turns DNA into Personal Health Forecast," The Washington Post, April 7, 2005, p.A1.

To evaluate the success of implementing the use of a genetic screening process in the hiring criteria for police officers, we would need to chart or track several factors over a predetermined time frame. A neutral study, one conducted by an impartial entity such as a university would be recommended. The success of the program would have to be determined by several aspects that would be visible over a long period of time. These aspects would include:

- Financial savings in medical insurance costs
- Worker's compensation savings to the employer and the state
- Lost work days due to genetically-relevant illness; and,
- An increase in career longevity of police officers.

These, and other factors, can be tracked and monitored as the police officers hired after the genetic screening is implemented, although the long-term benefit of the change may not be validated for decades. Since the time frame is so long, one would expect to see a trend of gradually increasing years worked as the newly hired police officers gain tenure. Beyond a neutral study, the insurance industry, the municipal management teams, and risk managers could all track, monitor and work with efforts to reduce injuries or disabilities. Their records could be utilized to determine how many police officers before and after implementation have received disability settlements and what the causations are.

**Recommendations:**

Once a viable and cost-effective technology is available, there are various positive and adverse issues that may arise as a result of utilizing genetic screening in the medical

testing of police officer candidates. The challenge is to remain focused on specifics of genetic screening for the predisposition of diseases, and not becoming distracted by unrelated concerns. There will be a need for support and involvement from other key players, but the politics and the public relations of implementing a tool can be softened with comparing the use of the genetic screening as another portion of the medical testing process to determine an applicant's physical eligibility.

There will be a need to demonstrate the effectiveness in the public sector such as utilizing a medical screening for ailment identification and early detection. Once the industry standard is implemented and proven to be a life saving tool, the acceptance should be less controversial as a screening tool for employment. After all, we use blood pressure test, visual acuity exams, and cardiac stress tests to determine a persons health and abilities, so why not a genetic screen? This screening can be an advisory model and there are other alternatives to help people get more comfortable around the uniqueness of this concept.

The overall goal is to hire the healthiest employees in a very stressful and physically demanding job. The goal is to strive for long-term investment of employees who will typically have 30- year career, and to reduce the disability retirements by hiring better employees at the onset. Genetic screening may become a cost-effective way to accomplish this noteworthy goal, and astute managers will stay abreast of developments in this field to ensure they act in a manner consistent with best practice, no matter where that goal may lead them.

**Conclusion:**

The risks and challenges discussed in this thesis are quite preliminary and difficult to comprehend because genetic science is still so new and not widely understood. The application of this technology to the thesis adds confusion because of the unknown. Hopefully science can educate the reader into what the true challenges are to develop and implement genetic screening in the medical testing process for police officer applicants. With the science of genetics being widely studied today, the hope is more knowledgeable decision makers and key players will have a more comfortable time in developing an industry standard that we can apply to the medical testing process for future police applicants in a fair and equitable manner.

When I started out on this journey I thought the idea would be interesting to look at genetic screening as a less intrusive and more acceptable alternative than the status quo. The stigma associated with genetics, however, kept cropping up and led me to really think if the concept will ever become a reality. The new rules are written at the edge. It is now time for dialog on genetic screening as an employment tool; those involved though, should be mindful of not falling off the edge.