

On A Professional Philosophy of Polygraph

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I began writing this article as a philosophic exercise (the concentration for my undergraduate degree many years ago) because I noticed that within my own profession, polygraph, there were aspects of professional philosophy that I found difficult to locate or identify. Well established standards of practice and ethical codes of conduct have long been set out, mostly by professional associations. There are also state laws and agency-specific standards established in both government and private businesses. All of these are relatively easy to find as they are often published and available on the Internet. I have heard them taught, discussed, debated, interpreted and updated on a fairly regular basis and believe them to be common knowledge within the profession. What I had difficulty finding are the important philosophic foundations from which those standards of practice and ethics derive. Therefore, I began to study, review and develop my thoughts, which eventually produced this treatise. It provides a framework for practitioner like myself to understand the concepts and precepts of professional philosophy, specifically as it applies to the polygraph profession, and it focuses on the philosophical foundations of polygraph. These foundations encompass how professional philosophic thought affects examiners, how we, as polygraph practitioners, apply philosophy within our profession, how our professional philosophy interact with society philosophies.

Defining Terms

You will often see the term “practitioner” in this dissertation because there are many individuals who influence, or are professionally influenced by, the polygraph profession, but who are not practicing examiners. Practitioner includes individuals whose primary vocation directly affects the profession, such as instructors, researchers, instrument manufacturers, etc. All of these individuals affect, and are affected by, the philosophy of the profession and are an intimate part of this discourse.

Although definitions for the term “philosophy” are common, I found that there are few, if any, published definitions for the term “professional philosophy”. Most academicians appear to use a generic definition of philosophy and apply it to the profession being discussed. Following this standard, I used the Oxford Advanced Learner’s Dictionary definition of philosophy: A set of beliefs or an attitude to life that guides somebody’s behavior. This definition seems to apply well to professional philosophy as professions generally hold out an accepted set of beliefs that guides the behavior of its practitioners. A professional philosophy can then be defined as: A set of beliefs or an attitude to life that guides the behavior of those who practice a specific profession. The key terms here are beliefs and behaviors as these are the seeds and the fruit of any philosophy.

It is important to note too that there are differing philosophies embraced by individuals or groups of individuals within any profession. These philosophies may conform or conflict but they represent deeply held convictions for the adherents. As will be discussed in this article, each has its place and are a vital part of the well-being of the profession.

My goal here is to establish definitions general enough to be accepted by differing individuals and groups as an appropriate delineation of what is being discussed. It is important to define professional philosophy and other supporting terms because it allows for a common discourse on specific attitudes and beliefs that are common within our profession. Examples of guiding beliefs include such tenets as the general acceptance of the theories of differential salience and psychological set and the belief that deceptive responses can create a recordable stress reaction in the autonomic nervous system. These beliefs are not shared universally outside the profession but within the profession are shepherding principles used to substantiate and justify the actions of practitioners.



Less formalized but equally important are the views proffered within the profession. Polygraph incorporates numerous such views ranging from the general to the specific. For example, it is generally accepted that polygraph is the most viable and valid process available for independently assessing the credibility of statements. More specific views include the establishment of a specified number of hours of ongoing training required for examiners to maintain their skills and the establishment of accepted scientific methodology when validating a technique. These and many more beliefs are deeply held within the polygraph profession and often hotly contested. They are evident throughout the profession in training material and literature, in codes of ethics, in standards of practice, and in roundtable discussions. They have in common the fact that they spring from, and identify with, a vibrant professional philosophy. It is the basis for how and why examiners perform in a specific way, why professional codes and standards exist, and how a professional philosophy unites extremely different individual views into a single métier.

There are other reasons why understanding the philosophy of the profession is important. A professional philosophy validates the practitioner's procedures. It brings integrity to the profession, and it brings integrity to practitioners as it demonstrates a consonance between beliefs accepted in the profession and the actions performed. Carefully examined and understood a professional philosophy will act both as a guide when difficult decisions present themselves and as a benchmark for reflection and evaluation of past decisions. This evaluation process, and the result of differing decisions, will act not only as a learning tool for individual practitioners but as a regulatory process through which the professional philosophy itself develops. Through discussions at settings such as polygraph schools, professional seminars, association meetings, and among individual examiners, a continuous progression of study, evaluation (understanding), application, and reflection keeps the professional philosophy dynamic. Each successive generation of new practitioners take part in this process incorporating newly developed philosophic standards into their own practice. This is an integral part of the development of the practitioner, partic-

ularly an examiner, and because it is, in part, the fruit of their own actions and deliberation, it becomes fundamental to their professional belief system.

This does not mean that all practitioners agree. Even those generally accepted philosophical tenets are not universally accepted by all members of the profession. This too is a part of the development of the philosophy. Individuals challenge a belief they do not share and influence others to evaluate the belief. If the principle is sound it will survive the challenge. This does not, however, produce a unified application of practice. An issue addressed later in this discourse.

There are distinct differences in practiced philosophy by specific examiners, government agencies, and private polygraph companies. For example, the Federal government has established specific testing techniques that its examiners are required to use even though there are techniques accepted in the profession as having equal or in some cases greater validity. The philosophical tenet for the profession in general is to use a validated technique that meets specified criteria for the type of test being conducted. The Federal government tenet agrees with the need to use validated techniques but they have to conform to criteria established for the specific Federal agency. Limiting testing to a few specific techniques is not generally accepted as a requirement within the profession, however, government agencies have determined that limiting the techniques used simplifies instruction, testing, and quality control procedures and produces an overall better program, especially for polygraph divisions with a large number of examiners. The basic philosophic precept agreed upon by the agency practitioners and the general polygraph profession is to produce the best possible examination process. They accomplish this through the application of different paradigms but each are rooted in the same professional philosophy.

Private examiners will at times have their own agenda which will make their professional philosophy not only vary from the generally accepted but, at times, conflict with it. Such differences are usually based in differing political philosophies which will be addressed later in this article. The purpose



here is not, however, to review the myriad of personal philosophies within the profession but to allow for recognition of how philosophy influences the practice of the profession and how the practitioners influence the profession's philosophy.

The Philosophical Foundations Of The Profession

A professional philosophy may be viewed as the interworking of three elements. These elements: standards of practice, ethical principles (morality), and professional politics encompass the doctrines of the profession. Standards of professional practice provide the framework for how practitioners conduct business. Morality provides the accepted tenets for right and wrong, as they are understood and accepted by the members of the profession, and as they are applied by and to society. Political philosophy embodies the relationship between the practitioner and the profession and between the profession, society and personal interests. Political thought brings the other elements together and is the impetus for the application of standards, within a moral framework, for the practice of the profession. Understanding these elements and how they interact allow us to view the polygraph profession on a macrocosmic level where positive and negative beliefs of the profession are not seen as personal defenses or personal affronts. Acceptance and rejection of beliefs should be seen as challenges. Should the beliefs continue meriting praise or are there stumbling blocks that need to be overcome? The political philosophy will act as a driving force to recognize and address challenges to professions beliefs and standards. Understanding these elements also helps the practitioner understanding how disparity in philosophic beliefs causes tension and dispute within the profession and how this too can be used for positive development.

Principles

Standards of practice and codes of ethics are the cornerstone of every professional polygraph organization. They can also be found in state polygraph laws and in government agency regulations. They are the measures used both to foster compliant behavior and punish violations and are necessary to pro-

vide the kind of guidance that engenders unity within the profession. Yet, with all the review, discussion, and training that goes into establishing and enforcing standards they have a serious shortcoming. They lack vision. I once heard a state Supreme Court justice comment that all you have to do to live freely in our society is not break the law. He explained that the law only addresses those minimum standards of conduct required to stay out of trouble. It does not set higher standards that we would want members of our society to maintain. So too, do standards of practice and ethics established in the polygraph profession set those minimum standards required to maintain a license, retain a position, or be a member of an association. Their importance in regulating behavior is without question. Still it is important to understand the limitations of standards and expand the philosophic discourse within the profession to address higher principles. Such principles encourage practitioners to rise above the minimum standards and create a measure for practitioners to use in evaluating their own work and the work of their colleagues.

For example, a particular professional organization or government regulation may require an examiner to test for a minimum of 90 minutes. The standard is based on a philosophic principle. The belief that examiners should not limit the amount of time necessary to ensure the examination is conducted properly. An examiner who ensures that each test lasts 90 minutes in order to meet the requirement would not be considered a poor examiner. However, an examiner whose tests last 90 minutes or longer because he or she is properly preparing the examinee in the pretest, properly performing the in-test procedures, and providing a properly scored result in the post-test is not just meeting a standard. He or she is practicing polygraph based in the principle of the standard. Time limits, maximum numbers of examinations allowed per day, and other similar standards fail to explain the principles and leave the examiner with a minimum requirement and not with true guidance. Therefore, it is not enough to establish standards of practice and ethics but we must express the guiding principles that support the standards. Providing a professional philosophy that addresses the guiding principles of the profession along with standards of prac-



tice and conduct sets the bar not only for compliance but for superior levels of performance. Published guiding principles also provide an understanding of how a polygraph practitioner should view the polygraph process, how to relate to fellow practitioners, and how to relate to society as representatives of the profession.

Ethics And Morality

In polygraph, as with most professions, moral standards (ethics) develop in three ways: externally (societally), internally, and from related professions. Societal morals are a standard used to compare all professional conduct. However, what is acceptable or not acceptable (right or wrong) to those outside the profession is applied to the profession based only on a general knowledge of how the profession operates. Internally, ethical standards are rooted in society's moral standards and applied with an intricate knowledge of how the profession functions. Ethical standards from related professions will bleed into each other due to their close association. For example, polygraph's close association with government service, particularly law enforcement, has created many shared ethical standards.

Before looking at the specifics of ethics in the polygraph profession it is important to note that ethics, as applied in a profession, are circumstantial. This means that practitioners must interpret and adapt moral principles to specific applications, often prioritizing standards according to a situation-specific hierarchy of values (Mabry, 1999). In the practice of polygraph, the circumstances of each examination must be examined when applying ethical standards. Applying an ethical standard without examining the circumstances is like quoting out of context. At best it will be misunderstood and at worst could be used to unjustly condemn the practitioner or the practice itself. This is similar to the law enforcement "reasonable man" doctrine which was at first applied to law enforcement officers in determining liability or negligence in the performance of duty. The U. S. Supreme Court in *Graham v. Connor*, 490 U.S. 386 (1989) recognized that law enforcement officers possess special knowledge and worked in unusual circumstances. The Court set a new standard where circumstances are judged from the perspective of a "reasonable officer" and not

a "reasonable man". Similarly, polygraph examiners possess specific knowledge and work in circumstances outside that of the normal person. This recognition is imperative before applying ethical standards. Even within the profession circumstances must be carefully evaluated before applying a specific set of standards. For example, practices acceptable for post-conviction sex offender testing are in many ways inappropriate for the testing of individuals accused of sexual offenses but have not been deemed guilty (pre-conviction). Although the accusations are similar in nature, the circumstances and purpose of the examinations are very different.

Societal morals are shared by the polygraph profession in the majority of situations, however, some established social mores conflict, or appear to conflict, with those of the polygraph profession. Reconciling conflicting moral standards can be a dilemma for any profession but are of particular importance in polygraph due to the use of such conflicts to support the views of many in the anti-polygraph movement.

One example is the condemnation of examiners who promote the use of deceptive responses for comparison questions. Encouraging a known or suspected lie response is a use of tactical deception. This is a common and acceptable technique shared by the law enforcement and polygraph professions but not in general society. In society the use of deceptive practices is generally considered immoral and, in some professions explicitly prohibited, such as with stockbrokers and real estate agents who may face disciplinary action if they were to lie during the course of professional affairs. Law enforcement supports the use of deception by arguing that used judiciously; the practice causes no harm and elicits important information for solving crimes. The practice has been supported by the courts (see *Frazier v. Cupp*, 394 U. S. 731, 1969) even though detractors argue that deception is morally wrong (see *Lynumn v. Illinois*, 372 U.S. 528, 1963). Although still debated the professional philosophy within law enforcement has accepted the practice as morally acceptable. Similarly, eliciting known or suspected deception while asking an examinee to be truthful (comparison questions) is a harmless practice in the polygraph profession and



viewed as morally appropriate.

In fact, the use of harmless deception is generally accepted in society. For example a woman telling her husband or father how young he looks (even though his hairline is receding and his bald spot is getting bigger) is acceptable because it does no harm and produces the desired outcome of making the man feel better. The author's opinion is that the probable lie comparison is equally harmless and results in the desired outcome of greater validity in the testing procedure. Viewed in this context the practice does not conflict with societal norms as each, taking into consideration the circumstances, produces a morally desirable outcome.

Discussion and evaluation of the moral implications of polygraph practices increases the understanding of what is and is not morally acceptable within the profession, to society, and why it is acceptable even when it varies from societal norms. The intent is not necessarily to change opposing views (although that may be desirable), but to present a reasonable position that ultimately will be accepted or rejected by society. Whether accepted or not, the discussion and evaluation process provides a better understanding of the effect of polygraph practices outside the profession. Practices, even those accepted by society, must also be periodically reevaluated to address societal changes in morality as society evolves. The ultimate goal is to arrive at the ideal polygraph testing procedure which is morally acceptable for the examiner, the examinee, the client or agency, and society. As with most such goals this may never be fully attained. After all we live in a society with plural moral values; however, the process of working toward this goal improves the knowledge base for those who support and/or practice polygraph and helps polygraph as a profession gain acceptance.

Behavioral Standards

Internally and societally the polygraph profession requires a higher standard of moral behavior not only in the practitioner's professional action but also in his or her personal life. This is similar to other professions (law enforcement, lawyers, doctors, etc.) based on the need to trust in the practitioner's professional expertise. The concern usually ex-

pressed is that a sullied lifestyle (professional or personal) impedes society's ability to trust the opinion of the practitioner. Law enforcement officers and other government officials are held to a higher standard of personal and professional behavior as "stewards of the public trust" (Gleason, November 2006). Again, the ability to trust the individual is the issue. The written directive used to address this concept is often stated in our rules and regulations (laws, by-laws, policy, etc.) using the somewhat imprecise term "moral turpitude". Most often this is defined as behavior that gravely violates the accepted moral standards of the community. Defining moral turpitude is clouded by competing moral values within society, the profession, and of specific organizations within the profession. Deciding that a specific behavior violates this rule can be difficult. However, using the baseline of trustworthiness (does the behavior compel others to distrust the individual) is often useful. This standard applies equally to government and private practitioners. Although it can be argued that private practitioners are not stewards of the public trust, the close association between private practitioners and government authorities (law enforcement, courts, probation, etc.) has caused the assimilation of the private practitioner into the company of those held to a higher standard. This is evident in the specific identification of individuals as polygraph examiners in news reports regarding accusations of illegal or improper actions that have little or nothing to do with their professional activities.

The moral component of a professional philosophy is the backdrop for all standards of behavior (ethics) and the guiding principles for self-evaluation and judging others in the profession. The more defined, understood, and expressed the moral values of a profession are, the more likely the practitioners are to mold their behavior to follow the principles. The goal is to have a standardized set of professional practices and ethical behaviors that are guided by moral principles and accepted by those who practice the profession.

Political Philosophy

Politics is the process of influencing the views and practices of others. The practice of politics is intended to establish a balance



among competing views in order to achieve a common goal. Within a professional philosophy politics is, ore specifically, the process of influencing the views and actions of practitioners based on the profession's morals principles in order to produce a quality product. The competing views are within the profession, with other associated professions and with the views of society. The noted political philosopher Leo Strauss wrote: "All political action aims at either preservation or change. When desiring to preserve, we wish to prevent a change to the worse; when desiring to change, we wish to bring about something better." (Strauss, August 1954). The purpose of political philosophy is to drive human action toward that which is good and just for society. For the polygraph profession "human action" includes everything addressed by the profession including the actions of the examiners, the actions of the public or private program administrator, the actions of instructors, researchers and polygraph school directors, the actions of professional organizations and regulatory agencies, and even includes the politicians who enact the law and regulations impacting the profession. With such a wide range of personal agendas, it is easy to understand why there are many competing and conflicting political philosophies affecting the profession.

Political Philosophy In The Polygraph Profession And Society

Polygraph specific views and societal views at times agree and at times conflict. The conformity, or lack thereof, is based on the view of what is politically beneficial for the profession and society. Conformity or conflict is also not static, as changing political views in either may bring the two into conformity or into conflict. For example, a prevalent political philosophy for many years in the polygraph profession was the use of the polygraph test primarily as an interrogation tool. Test validity (false positives, false negatives, etc.) was regarded as important, but obtaining a significant admission (or better a full confession) not only took precedence but was often considered the reason for testing. This did not conflict with the philosophy of society as it was commonly believed that no one confessed to a crime they did not commit. Later, case reviews and studies by social scientists such as Gud-

jonsson and Kassin, proved the reality of false confessions. Social advocates such as Barry C. Scheck with The Innocence Project then influenced society to alter its view. The changed societal philosophy then conflicted with that of the polygraph industry. Practitioners in the polygraph profession were then influenced to reevaluate their beliefs. The acceptance of the new societal view on confessions led to new training and improved interview procedures used by examiners. And influenced the increased importance of test validity.

This political process of conformity and conflict is a natural part of the development of a profession but conformity is not always the end result. From the early days of polygraph there have been conflicting views of polygraph by the courts. The rules of evidence used by the American criminal court system is based in a set of philosophic views of competing interests including the defendant's, society's, and the interest of the court in maintaining integrity. How polygraph fits into the court's philosophy depends on which competing interest wins out. For example, the New Mexico Supreme Court viewed the interest of the defendant and society as an overriding concern and accepted the "general admissibility" of polygraph based on that State's Rules of Evidence. Here the judge or jury is left to determine how much credence to give the evidence. The North Carolina Supreme Court took nearly the opposite view. In *State v. Grier*, 307 N.C. 628, 300 S.E.2d 351 (1983) the Court established an "exclusionary rule of admissibility" for polygraph evidence based on the court's need to maintain integrity in the perceived validity of the evidence. Other states accept the admissibility of polygraph on stipulation; based in a view that when opposing parties agree in advance of the need for polygraph evidence the interest of the defendant and of society benefit. These conflicting views not only affect the polygraph practice in different states or judicial venues, they also affect the political philosophy of the respective practitioners. For example, the impetus for increased documentation of polygraph validity and the establishment of national standards are at least in part politically motivated to influence the court's view on admissibility.

Conflicts between professional and societal views have often resulted in critical eval-



uations of the polygraph practice and the practitioners. The best known of these reviews to date is the 2003 National Academy of Sciences (NAS) report (National Research Council. Committee to Review the Scientific Evidence on the Polygraph. Division of Behavioral and Social Sciences and Education, 2003). This often cited report strongly criticized the polygraph profession for failing to follow established scientific methodology in many of the validity studies supporting the practice. As a result, critical reviews were recognized as a challenge to provide scientifically accepted evidence of practices. In their response to the NAS report the American Polygraph Association documented how the report has been used as a guide to develop standards, best practice models, and strategic plans. It also provided and interpreted data in a way that satisfied the NAS's standards allowing for better conformity and professional acceptance of the polygraph procedures (American Polygraph Association, 2014). Within this documentation, the APA attempted to provide and interpret data in a way that satisfied the aforementioned (NAS) political body's standard of acceptance so that conformity, professional acceptance and validity could be a better possibility. Here again the political views from representatives of the scientific community conflicted with the view of the profession. This resulted in a reevaluation from within the profession changing much of the political thought. The result was to demonstrate improvements in cited deficiencies and provide for improvement of society's view of the polygraph procedure and of the profession as a whole.

Other political/philosophical conflicts are more contentious. The "Anti-polygraph" movement presents a particularly difficult political philosophy for most polygraph practitioners to cope with. The movement involves a variety of political views ranging from those who question the theoretical foundations of the polygraph such as David T. Lykken and William G. Iacono to those who advocate the complete abolishment of polygraph testing from the American workplace such as George W. Maschke (Maschke, 2014). It is important to keep in mind that the viewpoints presented represent a true, although opposing, political philosophy. Their intent, as in all philosophies, is to foster a just society. They believe that past abuses of the polygraph have engen-

dered unjust actions. Their concern regarding past abuses, and the potential for future abuse of the polygraph as an assessment tool is not unwarranted. There are, after all, noted false positives, false negatives and abuses of the process. These are due to varying issues including examiner error (misinterpreting charts, utilizing unproven methodologies, etc.) and other human frailties, and the limitation of the polygraph procedure itself to identify lying, a psychological activity, through interpreting physiological data. However, by viewing opposing philosophies in a positive manner the profession can recognize when arguments are factually based and institute corrections to address the problems.

Political activism is a common tool to criticize or support the profession. This usually involves the use of mass e-mails, websites, media appearances and other venues to promote a particular philosophic/political agenda. Within the profession, political activism is often used to influence policy decisions and association votes. Polygraph critics also use political activism to attack the profession. Although a topic of discussion and concern with the profession, historically such attacks have not significantly inhibited the profession.

When politics is used to influence others it must be carried out responsibly. Disagreement fuels debate but reputations are made and broken based on how accountable individuals are for the views presented and on the transparency of their motives. The irresponsible use of influence (personal benefit, hidden agendas, etc.) never advance the profession and often weaken the philosophic bonds shared by practitioners. The greater the influence of the individual or organization the greater the responsibility for ensuring the view they present are altruistic and advance the values of the profession.

The strength of conflicting views and philosophies is that they result in bringing about improvements and a better understanding of the polygraph profession. As societal and professional philosophies compete to preserve or change the profession the actions of practitioners evolve strengthening their understanding of current techniques and incorporating new concept and procedures into practice. The profession is then critically re-



evaluated internally and externally to determine if the profession has gained in understanding and in societal acceptance. This is the great strength of the political process.

Political Philosophy Inside The Profession

Competing political philosophies within a profession are common and often contentious but are a necessary and healthy part of the profession's growth. The early years of polygraph were dominated by a law enforcement model based in the work of pioneers like John Larson, Leonarde Keeler and John Reid all of whom had a history of working with law enforcement agencies. This lasted through most of the 1940s. The mid twentieth century saw the introduction and rapid growth of security and espionage testing in the Federal government. The transition from criminal to security testing created a major shift in the viewpoint of practitioners and differing views create differing political philosophies. The use of polygraph in private industry was well established by the 1960s which created another philosophic shift. Although each of the three fields developed diverging political philosophies, each were rooted in the same moral principles and developed along the same lines of ethical standards. For this reason, national and regional associations were able to include all three fields in their membership and on their controlling boards. This is not to say that diverging philosophies were not, at times, contentious. The breakup of Cleve Backster and Richard Arther and the divergent philosophies of Backster's "exclusive" control (comparison) questions and John Reid's "inclusive" control (comparison) questions are just two examples of competing political philosophies which have in the past caused friction within the polygraph profession. Although contentious at the time it is clear to see, from a now historical viewpoint, that each has provided information and concepts that have made the profession stronger. Today, complex issues regarding test validation, scoring models, approved techniques, countermeasure detection, EDA mode differential, probable versus directed lie, and computerized algorithm scoring models, just to name a few, all have adherents and critics advancing their own political philosophies. It is easy to get caught up in the argumentation of who is right or wrong and lose the philosophic perspective of what is true, just, and

better for the profession and for society. Perhaps for this reason, some in the profession want to keep differing views out of the public eye (a task which is, in my humble opinion, impossible in today's world) but it is necessary to remember that these sometimes heated debates are a sign of a robust profession. In his *Philosophical Dictionary* Voltaire stated "... discord is the great ill of mankind; and tolerance is the only remedy for it." (Voltaire, 2006) One of the greatest strengths of the polygraph profession is the ability for each practitioner to voice his or her opinion. Whether one believes an opinion to be brilliant or asinine, those who look for gems of wisdom in each view can avoid making personal affronts will find themselves on the path to advancing the profession.

Political/philosophical discussions in the profession have led to the development of standardized testing techniques, uniform testing formats, validation studies, computer algorithms, accreditation programs, and PC-SOCT testing, just to name a few. There can be little doubt that developments in theoretical polygraph science, testing techniques, instrumentation, and scoring techniques (especially in the last ten years) have significantly impacted the view of polygraph by the public and the courts. This was particularly evident in the unusual decision made by Ohio Judge Judy Hunter in *State v. Sharma*, 875 N.E.2d 1002, 1003 (Ohio Ct. Com. Pl. 2007). In this decision Judge Hunter recognized changes in rules of evidence and advancements in polygraph technology and admitted an unstipulated examination into evidence in a criminal case essentially disregarding Ohio law. This is a good example of how society will recognize (although slowly) new developments in the profession. Internal and external recognition then strengthens the profession's image which promotes more discussion, new philosophic viewpoints, and ultimately new advancements to improve the industry.

Conclusions

Philosophic thought is often mistakenly thought of as a set of lofty, unattainable ideals presented by academics with their heads in the clouds. The truth is that philosophy, and in particular professional philosophy, is about interests and behavior. The behaviors of examiners, instructors, school administrators,



association board members, and everyone else involved in the polygraph profession is guided by understandable philosophic concepts. What are best practices (principles)? Why they are best practices (morality)? How can we ensure best practices continue or needs to be changed based on a regular review of what we know and what new information we discover (political philosophy)? The answers to these questions are, and will continue, changing and evolving as long as the profession is strong.

Individually, polygraph associations, schools, government agencies, and private examiners are, in general, better about adhering to basic ethical principles than at holding themselves accountable to a higher philosophy. Accountability is not only a personal issue (holding oneself accountable) but is a way for practitioners to profess their professionalism to their superiors, their subordinates, their clients, their students, their fellow examiners, and society as a whole. I advocate a written and when possible a published professional philosophy. Such statements, although not totally devoid, are rare in the polygraph profession. They not only help us to strive to be the best, they hold us accountable for making that journey.

Below I present my own professional philosophy. I do not present it as a model as it is based on my own political philosophy which will not agree with many other practitioners. It may, however, be an example for practitioners who see the benefit in holding ourselves publicly accountable for professional behavior. I encourage all those in the polygraph profession to compose and publish their own professional philosophy. More importantly, I encourage all polygraph professionals to work and live their professional philosophy and not just meet the minimum standards learned in polygraph school or subscribed to as an employee or an association member.

The Author's Professional Philosophy

The pursuit of knowledge and the pursuit of truth are the cornerstones of the polygraph profession. The words of Edmund Burke convey my standard: "But whoever is a genuine follower of Truth, keeps his eye steady upon his guide, indifferent whither he is led,

provided that she is the leader." As a practitioner I will follow truth disregarding personal feelings, inclinations, and seemingly contrary information. Plain or elusive, truth is the objective.

As a practitioner I believe in the consistent process of studying and acquiring new knowledge about polygraph and the polygraph profession. I believe in the process of continuing education and review of past learning, never forgetting how hard it is to fully understand all that goes on in a polygraph examination and how easy it is to forget what I've previously been taught.

As a practitioner I impact the lives of the persons I instruct, the lives of those I test, and the lives of those I test for. I am committed to striving for excellence in all the work I produce. I recognize the importance of planning, uniform presentation and accurate evaluation to produce quality work.

As a practitioner I have the opportunity to learn from and influence my profession one person at a time. I will seek practitioners who have risen above the mundane and hold them as models for my behavior. I will also hold myself to such morals and principles that other practitioners will want to model me.



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Alternative Locations for the Cardio Cuff

Is it safe? Are the data similar?¹

Mark Handler, Raymond Nelson & April Gougler-Floyd

One of the common waveforms collected and analyzed during Psychophysiological Detection of Deception (PDD), or polygraph, examinations is the cardiograph. It is collected using a partially inflated blood pressure cuff usually placed on the upper arm over the brachial artery and inflated to about 55-65 mmHg. Phasic changes in pulse wave amplitude and waveform baseline are related to changes in relative blood pressure (Handler, Geddes, & Reicherter, 2007). Traditionally, only the change in the diagnostic waveform is used in manual scoring using where the diastolic points' slope changes from negative to positive. Waveform baseline can also be evaluated using the systolic peak points, and laboratory studies have describe the use of the average of all systolic and diastolic peaks (Kircher, Kristjansson, Gardner, & Webb, 2012; Kircher & Raskin, 1988).

Typical cuff pressure partially occludes venous return distal to the cuff location resulting in vasocongestion (Podlesney & Kircher, 1999). Test subjects sometimes report unpleasant feeling in those areas including tingling and loss of sensation (Yankee, 1965), and the resultant skin color changes can alarm some test subjects. Researchers have tested alternative technologies such as the Finapres (Podlesney & Kircher, 1999) and alternative devices like a finger cuff (Dollins & Cestaro, 1997) in search of a replacement for the upper arm cuff. In order for any device to be considered an acceptable "drop-in" replacement there should be a strong correlation between the traditional and experimental waveforms.

The Finapres works on the theory of Peñáz principle where a force exerted by a body can be determined by measuring an op-

posing force that prevents physical distention or changes. The Finapres offered significant correlation with the traditionally measured cardiograph. For diastolic changes the regression coefficient mean was $r = .84$. For systolic changes, the mean was $r = .74$. The Finapres has been replaced by a device called the Portapres (Finapres Medical Systems, The Netherlands). Unfortunately, the price of the device (approximately \$40,000 U.S.) is cost prohibitive (Gerin, Goyal, Mostofsky, & Shimbo, 2008).

The one study we found on the finger cuff (Dollins & Cestaro, 1997) suggests it is not a suitable drop-in replacement for the traditional arm cuff. These researchers suggested a minimum point-biserial correlation of .90 was needed in the waveforms to consider the finger cuff a drop-in replacement. They collected simultaneous cardiographs from the upper left arm and both thumbs. The investigators reported congruence of .9 or greater less than 75% of the time overall. Additionally, they reported having to make about 150% more centering corrections with the thumb cuff than with the arm cuff. Their final recommendation was the finger cuff on the thumb not be used as a drop-in replacement for the arm cuff.

One alternative cuff location reported in the literature (Prado et al, 2015) is the lower leg or calf. The primary artery monitored here is the posterior tibial artery. Medical concerns about test subjects with deep venous thrombosis (DVT) warrant caution if selecting this location. DVT occurs when blood clots or thrombi form, usually in the large veins of the legs and many people with DVT are asymptomatic, and unaware of their condition. A very serious condition can occur if a blood

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clot should break loose, travel to the lungs, and block blood flow to a portion of the lungs. When this happens it is called a Pulmonary Embolism and it can be a serious health risk. The American Association of Critical Care Nurses (AACN) cautions that blood pressure cuffs should not be applied to extremities with DVTs or on patients who have a risk of DVTs. The concerns are that mechanical agitation for extended periods of time can increase the risk of an embolism (AACN, 2015). The Wound Ostomy and Continence Nurses Society (WOCN) has also cautioned that applying compression with the blood pressure cuff may dislodge blood clots (WOCN, 2012).

Risk factors for DVT include; increased age, cancer treatment, smoking, taking birth control pills & other hormone therapy, diabetes, being sedentary for extended periods of time, obesity, heart disease, blood disease, injuries to veins, pregnancy or recent birth, and slow blood flow through veins. Many people with DVT are asymptomatic and thus unaware of their condition. This should be a concern to examiners seeking to collect cardiograph data from the leg and warrants a consideration of the benefits versus the risks. While cardiograph collected from the lower leg has been described by examiners as relatively stable, the potential health risk of an unknown DVT suggests alternative cuff placement. Examiners desiring to collect cardiograph data from these locations may want to query their subjects about whether they have any of these risk factors.

Other medical conditions cause concern with maintaining prolonged pressure to a person's lower extremity. People with peripheral vascular disease, specifically peripheral arterial disease (PAD), already have narrowing in the lower extremity arteries. While PAD can occur in any artery it is much more common in the lower extremities, thus raising concern with putting the blood pressure cuff on the lower leg. PAD screening is limited because many people are asymptomatic and unaware of the medical condition. Also, people with diabetes can have vascular disease and nerve damage and prolonged pressure from a blood pressure cuff may result in pain, swelling, increased numbness, and changes in skin color.

Another suggested alternative

location for cuff placement is the forearm. The AACN suggests the forearm as the second choice location for blood pressure measurement following the upper arm (AACN, 2015). When the blood pressure cuff is placed on the forearm it may be better tolerated by some test subjects, even at pressures of 80-90 mmHg. In order for this to be an acceptable alternative for polygraph we should have data showing a high degree of correlation with the traditional cuff. Unless the replacement is very similar in design and use, we expect to have differences in the two tracings, which can introduce unknown variability into the polygraph scores. If the correlation (or covariance) is sufficiently high, we can expect the scores to differ by less than a normal rounding coefficient. In the case of manual scoring with integer points, the rounding coefficient will be $\frac{1}{2}$ of one point. The impact of rounding will, of course, be slightly different whether using subtotal or grand total scores, due to the differences in variance. Initial simulations suggest that a correlation coefficient of .97 will be sufficient to constrain differences in scores to within $\frac{1}{2}$ point with both subtotal and grand total scores.

The practical meaning of this is that any sensor that can achieve a correlation coefficient of .97 or greater with the current cardio arm sensor can be expected to serve as a drop-in replacement. This is without the need for revalidation of the structural models or recalculation of normative data. For field examiners this will mean that drop-in sensors that achieve this correlation can be used without concern for adjustment of decision cutscores. We can expect the test precision and error rates to be within known and established alpha boundaries.

Caution is warranted whenever we are attempting to substitute proven technologies with improved replacements. As a general rule, new replacement technologies should offer more advantages and fewer disadvantages. The substituted part should have performance that equals or exceeds the technology being replaced. We recommend continued interest in the forearm cuff as a potential drop-in replacement for the traditional arm cuff.



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