

EDITORIAL I

Fingerprints and Behavior

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Edward D. Campbell, JD

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Much of the material presented in the accompanying power point presentation was first presented in Taiwan in the summer of 2011. That presentation also presents print patterns considered by others including some modern behavioral dermatoglyphic writers: Dean Mary Lai of the Taiwanese Mind Measurement Education Association,¹ Richard Unger,² Ronelle Coburn,³ and Jennifer Hirsch.⁴ This is done to illustrate the challenges we face in the study of behavioral correspondences to dermatoglyphics. This study goes back to the 1930's and by now has a fairly firm foundation so that it can be accepted as a true academic study, as well as a basis for human resource and educational and psychological assessments and in the future criminal forensic profiling following the pioneering work of Oleg S Avdeychik.⁵

I work with at least two dozen different fingerprint patterns. Each pattern indicates a different life long approach to some aspect of life. Each finger indicates a different aspect in life. A number of composite and compound print patterns indicate dual or multiple approaches to those aspects. So it is readily apparent that each individual may be born with a highly complex set of approaches to life that can be identified through analysis of the fingerprints. Seldom do we find the same print patterns on all fingers, though it does happen. Frequently we may see several different patterns for these prints on the hands and the patterns can differ from finger to finger as we compare the hands. Sometimes sex may play a part, as apparently more arches are found on Females than Males.

These pattern correspondences to behavior are set by the sixteenth to eighteenth week of gestation so the child is born with a full set of them. The new born child is not a tabula rasa, a blank slate to be molded after birth. There are many other approaches to aspects of life also established by the eighteenth week of gestation and revealed in the dermatoglyphics of the hands and feet when the child is born. Also present when the child is born are potential parental genomic imprints, various possible allergies, and a variety of other features that may be the result of nurturing after the eighteenth week of gestation or in the beginning of DNA triggered events during gestation and, some even speculate, during the maturation of the future fertilized cell and the sperm. All of these have impacts on the mental health and learning abilities of the child.

The child, while learning survive, to cope with his or her environment, also must learn to master the various drives he or she is born with. Each fingerprint does represent at least one separate aspect of life and potentially one or more distinct drives. Compound and complex prints can represent more than one drive. These drives encompass approaches when viewed within all of the aspects that are not always complimentary. Some potentially conflict with others and all effect the ability to survive, thrive, learn and contribute to a full, socially significant life and continuation of the species, humanity.

Humans generally have ten fingers representing ten different aspects in life and as many

or more drives. I look to at least two dozen distinct fingerprint patterns to represent these drives, and these patterns could be found on any of the fingers. There are some more prevalent in number and location than others according to statistical studies. So is it any surprise that we are all so different while sharing some common traits? Is it any surprise that through a combination of Nature and Nurture, or perhaps only in Nature, we are born with inherent contradictions and conflicts that make it harder for some of us to thrive, cause some of us to display learning disabilities or other socially, sometimes very subtle unacceptable behaviors or appear to delay our learning abilities or development of our social skills.

When it comes to mental health and learning abilities, one must say, as one does with athletes, look to what he or she is born with, and learn how best to use it. A researcher of athletic performance has reported statistically significant correspondence to Olympian and World Class performance of a certain fingerprints in her study of Chinese athletes. Professor Shao Ziwan, Vice Director of the Dermatoglyphics Group of China Genetics Society and Vice Director of the Scientific Committee of Henan Province Old People Sports Association, reported this in her study published in 1989.⁶

Let me for a moment illustrate just one conflict. It appears that the correspondent behavioral trait of a whorl fingerprint on the thumb involves hating to lose, the desire to win, the competitor. Those with a loop on the thumb appear to be the cooperators, the lovers rather than fighters, who have little or no interest in competition. Those with arches will plow their fields, do their allotted tasks, neither striving for victory nor the companionship of cooperation, but pushing to live and let live so long as their paths are not blocked, and enjoying the efforts of living and working. When I see such a print on the ring finger, I say that person likes to sweat from honest, hard work. Of course, humans generally have two thumbs, and thus two possible fingerprints and they are not always the same.

The discordance of fingerprints is an open invitation to learn more about human nature. From repeated observations we begin to learn of the areas of life referred to by the features of the hands. We can see by observing that those with whorls on their right thumbs are competitors in school, sports and work, with strangers as opposed to those they consider family. If they have a loop on their left thumb, they seek peace at home, without conflict or competition with those they consider as family. For this obvious reason I advise those with such discordant prints not to do their work out of their home, whether it be earning a living or doing school work. They must separate these tasks from the family tasks or they will take the edge off their working skills and drive, or they may bring conflict into an area, aspect of life, where they do not want it, or both.

More recently we have discovered another problem: They will lack fine hand coordination so that they will need special practice to achieve success in two handed sports. They will lean towards the use of one handed basketball free throws as their two handed shots tend to go off the rim and they have to correct for hooks and slices in golf. Early indications are this may involve split second differences in timing control of the left and right hands. Perhaps this might be related to some development of the corpus callosum. Similar effects have been noted in those with other discordant finger patterns.

Sometimes the prints can be perfectly matched, yet the child is guided towards failure or abandonment of potential careers because his or her basic desires and drives are not recognized and understood. This was observed recently in a young lady with perfectly matched ulnar loop prints on all ten fingers. She had excellent balance and coordination and had been trained to be a competitive ice scatter racer. She loved to perform, but gave up her training as she hated competition. It made her physically and mentally ill. All her fingerprints were loops. Loops on thumbs indicate lack of competitive spirit, that drive to win.. Her teachers misguided her because they did not understand this. All they saw was her accomplished skill. But it was a drive, or rather lack of drive that could be seen in seconds by a trained eye. This student was set up to fail. I assured her she did the right thing in dropping out. She might have made a jewel in Ice Capades where she could be a member of the ensemble, the team.

As the loop is the most common pattern, many educational systems fail by failing to take the information in the prints, available from birth, into account in educating children. They impose arbitrary age-learning expectations or subject them bell shaped curves or statistical analysis built on competition. This can set up the majority of students to fail or just slide by.

Fingerprints can give us tantalizing windows into the developing brain. G came to me with a curious print on one of her middle fingers. I call it a broken print as the ridge lines did not form clear patterns during development. The middle (number 3) finger historically has been known as the Saturn finger. It is the finger associated with judgement and balance in palmistry literature and history. G was known as a flighty person, not knowing from day to day where she might be. In discussing G with the Chiropractor, who brought her over so I could take her fingerprints, it was revealed that when G shut her eyes, she lost her balance. Balance is controlled by three senses, the eyes, the inner ears and the proprioceptors. The proprioceptors are the nerves that form the sensory system within the body that responds to its position and movement. The latter two systems, inner ears and proprioceptors appear to connect to the higher brain through the basil ganglia. This formation is still in formation during the development of the prints. A lesion on either side of the basil ganglia appears to affect both sides of the body.⁷ Thus it might not be important that the broken print is seen only on one hand.

The ability to focus immediate attention appears to be more reflected by the thumb prints. Here I had a couple of broken print experiences with Thumb prints. One was of a young man who had been diagnosed with ADHD (Attention Deficit Hyperactivity Disorder). The brain's basil ganglia, consisting of the caudate nucleus, putamen, globus pallidus, subthalamic nucleus, and substantia nigra, besides being known for influencing movement and muscle tone, are also integral circuits mediating higher functions of attention and affective states. Anomalies have been reported in male-predominant pediatric disorders such as ADHD through brain scans.⁸ As I recall I believe the fingerprint pattern break was more towards the top of the finger.

The second was of a middle aged woman whose husband confirmed she had problems exhibited by going into a room but promptly forgetting why she did this. Apparently it was more likely to happen to her than one normally experiences in life. Her print break up was more to the side of the print, as I recall. Unfortunately at the times I did not record the exact location of the anomalies. Future researchers should observe this as it may be that in the chain of effect, the sign

might indicate a problem in the higher areas of the brain that are more unilateral in effect and hence more easily treated. It might be that the prints can help determine whether brain anomalies are located more in the deep subcortical basal ganglia area or are confined more, for example, to the prefrontal cortex type lesions, where other parts of the brain can compensate for the problem. In any event, observations of these print features before the age of two, while the brain is very plastic, could give us a chance of early corrective intervention to help improve these potentially damaged cognition and memory functions. As the prints are available at birth, it would be another reason for scanning the hands at birth.

The fingerprints form at the end of the fingers, opposite the nails, on the distal phalange. On each site, the formation begins at about the 10th week of gestation at two places in each of these areas, at the tip, or distal end, and in the proximal (lower) third. In those locations we begin to see ridge development. The prints grow in a radial manner from these two central foci. On the fingertips will form the arches, whorls, loops or other prints as the twin growths interact and are influenced not only by their genetics, but by the surrounding environment as proven by variations in monozygotic (identical) twins prints and with multiple varying birth prints. Besides genetics, they are influenced by womb environment and nutrition. This allows for the tremendous variety of possible patterns.

Theoretically one could count the number of different print patterns, estimated from three to 48 or more, and vary their location on the five fingers of each hand and estimate there would be a near infinite variety of fingerprint pattern types. But practically far fewer combinations have been found.⁹ Estimates based on population studies appear to indicate that considering the actual varieties of fingerprints displayed in populations in combinations over all ten fingers, there will typically be a little over of 7,000 differential pairs of hands based on fingerprint types. Some prints are very rare, and even more common prints are rare rarer on certain fingers. Still, 7,000 different types of behavioral combinations just based upon fingerprints puts a definite limitation on the term normal behavior, and the accuracy of any studies that rely upon such a term or idea. It will take the use of AI and large computer capacity to really work this all out.

The time of formation is critical. The proximal and middle phalanges begin to develop their papillary ridges in the 12th week of gestation. There is strong evidence that the afferent neural development plays an important role in the spatial and temporal sequence of the papillary ridge formation, the dermatoglyphic map of the hand.¹⁰ The flexion creases have been established even before the prints.¹¹ Dermatoglyphics are formed during the last part of the embryonic period under genetic sway and the patterns do not change thereafter. They also reflect environmental factors present at the time. They thus give early stage indications of the stability of development. As such we believe they may form markers for nonspecific insults during the embryonic period that destabilizes the developmental control systems that may result in congenital malformations of any organ undergoing concurrent epigenesis.¹² So there is much to be studied for future use in diagnoses of congenital anomalies. Any brain scans or probes for such problems should be accompanied by corresponding full dermatoglyphic work ups for future reference.

The new born baby is not a *tabula rosa, the proverbial blank slate to formed by the*

influences of upbringing and environment. . He or she does not come into the world with a clean sheet to be writ upon by the milieu, the surrounding environment. The child comes into the world with a full set of basic drives, character traits and abilities to react. The child has biological templates of character at least since the establishment of the flexion creases by the tenth or eleventh week of gestation, and the dermatoglyphics set as early as the tenth to thirteenth week of gestation. We can read them in the fingerprints, the palmar dermatoglyphics and the flexion lines.¹³ Its fingers can be analogized to ten or more eyes, or lenses, through which he comes to know his world. Some of those lenses are double or multiple. The hand forms a true spring board into modern biometric analysis of psychology and general health from birth.

The child is first tasked with learning to understand and control these drives and visions of the world. He or she has to try to gain control or understanding of what he sees through each of those lenses. As some may be looking through fifteen or more different views of reality, do not be surprised if it takes that child longer to gain the ability to “learn.” That is a basic reason why it is impossible to put all children on the same learning path with the same age accomplishment expectations. That merely displays the stupidity of the teacher and the system that tolerates such methods. Unfortunately, most current technologies are only focusing on the very smallest part of the educational puzzle. Like any good physician knows, the first book to read is the patient, the child.

Major psychological testing using dermatoglyphics can be accomplished by hand and fingerprint scanning, and even scanning of the soles of the feet. Programs can be written to recognize all patterns found and then match them in data bases containing behavioral correspondences in systems and that can also learn to recognize new patterns and correspondences. These can be cross referenced with data bases of corresponding behavioral and medical traits both for assessment and for research. This method has distinct advantages.

Hand scanning for aptitudes and character traits has many advantages over most other major psychological assessments.¹⁴ The current major psychological assessment tests can typically take from twenty five minutes to an hour and a half to administer. A hand scan should be administered in under a minute. Most psychological tests will depend on some language and communication skills, which can bring in the need for interpreters, or make them unfeasible administering to persons who do not speak the language of the tester. Hand scans do not depend on language and thus are available for infants. Hand analysis, like other biometric observations, does not depend upon the subject’s test taking skills or reading or mathematical comprehension. The tests do not need to be designed to identify untruthfulness, refusal to respond, lack of attention of the subject during the test. Just check the hand and feet for foreign objects, such as dirt or paste on the dermatoglyphic patterns.

I would also like to recommend one study the shape and relative size of the hands and fingers. John T Manning has emphasized the importance of the relative lengths of the index and ring fingers.¹⁵ Not only are hand analysts interested in the length of fingers but also the shape of fingers as illustrated above. For example, observe a slight bend of the middle (No. 3) finger toward No. 4 (the ring finger). This will indicate he or she is their own worst critic. Such subjects have trouble living up to their own standards. Part of the condition of the fingers has

long been recognized in medicine as useful for diagnostic purposes. The fingernails in standard western medical texts have a long history of being used to indicate potential clinical problems.¹⁶

I see these finger shapes and lengths, as I also do fingerprints, as correspondences to the expected behaviors of what would be considered normal, healthy individuals in their approaches to life. Arnold Holtzman, PhD, in Israel sees many of them as signs of psychological syndromes or disorders subject to counseling and therapy.¹⁷ While Dr. Holtzman is familiar with all types of hand analysis from his thirty years of study, his great strength can be found in his psychological correspondences to hand morphology. He developed the school of Psychodiagnostic Chirolgy (PDC) in Israel. Dr. Holtzman has finally received the long earned professional reputation for his work in Israel in December 2006 as the invited speaker at a series of three four-hour lectures to the Israel Association of Psychologists (affiliated with family counseling clinics) at its center in Tel-Aviv. While we may have professional differences,¹⁸ his approach shows promise and has also been used by others in Hong Kong, principally Fritz Pang and Irene Tsang of the New Horizons Development Center, who are students of MMEA, Mary Lai's school in Taipei.

Another student whose work should be mentioned is Martjin C. van Meensvort of the Netherlands. He has been a keen student of hand analysis, and applied some standard psychological inventory tests, with some success. He used double-blind psychology research in his studies with the Big 5 inventory testing as a way to assess the accuracy of hand analysis.¹⁹ I explored using the MMPI and the CPI for a time, but decided they really did not reflect the characteristics I was observing so we are using independently developed behavioral inventories in our current research. Our inventories are based upon commonly observed behavioral characteristics without regard to any current psychological interpretations.

It is clear that there is a bright future for the whole field of biometric analysis of the hands and feet,²⁰ whether in expanded dermatoglyphics, forensic sciences or in hand analysis. There are definite futures in medicine, human resource evaluation, criminal forensic profiling, education, career counseling, all of which can find commercial applications and thus provide the needed funds for further research and development in the hardware and software fields for these fields. It is also pregnant when applied to theoretical area of science. We have only just begun to scratch the surface.

But to reach this new plateau, those using dermatoglyphics must go beyond the concepts of Elbyaly and Schinder²¹ of narrowing down the fingerprints to five and ridge counting, of narrowing down the field of palm analysis to ridge counting and *adt* angles, and perhaps main ridge lines. We need to come together in much broader hand and other forms of biometric analysis. Fortunately in the computer age, with the IT development of new data capture, analysis and mining hardware and software, it is possible, possible to at last begin to comprehend the vast information stored in the patterns of the skin and shapes of the hands and feet and to correlate our findings with other studies in medicine, behavior, the human condition, and the advancement of science.²²

1. Lai, Mary, **The Value of Applying Dermatoglyphics to Special Education**, Paper published for Humanity Development and Cultural Diversity, the 16th World Congress of IUAES -©2009

This paper book is in English and Chinese. Her other publications are almost entirely in Chinese.

2. Unger, Richard, **Life prints, Deciphering Your Life Purpose from Your Fingerprints**, © 2007 Crossing Press, Berkley/Toronto.

3. Coburn, Ronelle, **Destiny at Your Fingertips: Discover the Inner Purpose of Your Life and Wat it Takes to Live It**, ©2008 Llewellyn Publications, Woodbury, MN.

4. Hirsch, Jennifer, **God Given Glyphs, Decoding Fingerprints, Chirolgy - The How to of Hand Reading**, ©2009, Muse Press, Cape Town, South Africa.

5. See especially note 8, Chapter 5 Banik, Sudip Datta. editor **Research in Physical Anthropology: Essays in Honor of Professor L. S. Penrose**, ©2010 Unasletras industria editorial, pp.109-110.

6. Shao Ziwan, **Selection of Athletes By Dermatoglyphics** © 1989 (Published in Chinese in China)

7. Phantom images stored in flexible network throughout brain, November 4, 2010 by Editor Kurzweil AI, see also Phantom images stored in flexible network throughout brain by Robert Sanders, Media Relations | 03 November 2010, UC Berkeley News.

8. Toga, A. W., Mazziotta, J. C., **Brain Mapping, The Systems**, ©2000, Academic Press, Harcourt Science and Technology Company, pp 578-579.

9. Avdeychik, Oleg S.& Lagerstrom, Kenneth A., Dispensation of Dermatoglyphic Whorl Patterns on the Hands' Nail Phalanges © 1999 <http://www.humanhand.com/dispensation.html>

10. Moore, SJ, Munger, BL, The Early Ontogeny of the Afferent Nerves and Papillary Ridges in Human Digital Glabrous Skin, *Brain Res Dev Brain Res* 1989 Jul 1; 48(1):119-41
See also Dermatoglyphic books below and Stevens CA, Carey JC, Shah M, Bafley GP, Development of Human Palmar and Digital Flexion Creases, *J Pediatr* 1988 Jul; 113(1 PT 1):128-32.

11. Kimura S, Kitagawa T, Embryological Development of Human Palmar, Plantar, and digital Flexion Creases, *Anat Rec* 1986 Oct; 216(2):191-7. See also Lacroix B, Wolff-Quenot MJ, Haffen K, Early Human Hand Morphology: an Estimation of Fetal Age, *Early Hum Dev* 1984 Feb; 9(2):127-36

12. Glodberg CJ, Fogarty EE, Moore DP, Dowling FE, Fluctuating Asymmetry and Vertebral Malformation. A Study of Palmar Dermatoglyphics in Congenital Spinal Deformities *Spine* 1997, Apr 22:775-9; A. C. Bogle, T. Reed, and R. J. Rose, Replication of Asymmetry of a-b Ridge Count and Behavioral Discordance in Monozygotic Twins, *Behavior Genetics*, 24 (1) Jan. 1994, pp. 65-72./

13. Campbell, E.D., Encyclopedia of Palmistry, ©1996, Paragee Division Berkley Putnam, N.Y. and bibliography therein, and <http://www.edcampbell.com/PalmD-History.htm>.

14. For descriptions of leading current psychological assessments see generally *Major Psychological Assessment Instruments* 2nd Ed. Charles S. Newmark ©1996, Simon & Shuster; and *Psychological Testing* 6th Ed. Anne Anastasi ©1988, Prentice Hall.

15. Realizing the importance of the full hands and the fingers leads us to the obvious consideration of their shape and size. Strong study results have been published in this century on comparative lengths of the second and fourth fingers (index and ring fingers) together with behavioral characteristics displayed and hormonal influences on their development in the womb. See for example Manning, John T., **Digit Ratio, A Pointer to Fertility, Behavior and Health**, ©2002, Rutgers University Press; and Manning **The Finger Book, Sex, Behavior and Disease Revealed in the Fingers**, ©2007, Farber & Farber, Ltd.. Briefly Manning shows relationship of higher levels of testosterone in comparison to estrogen is a predictor of longer ring than index fingers, possibly better male fertility, and more likely display of male traits such as aggression and risk taking. This we observed in our interviews with subjects before his excellent study. He also noted a reverse effect in females, but for future study, at least in urban areas of North America, we see many women with this same trait, which may explain more aggressive women in our experience as well as their tendencies towards smaller families. My own studies have indicated some difference in general shapes of hands of those who prefer to live in dry climates as opposed to those who find themselves wanting to live by or near the water.

16. See pages 112-115, **Mosby's Guide to Physical Examination**, Henry M. Seidel, M.D., Jane W. Ball, R.N., C.P.N.P., Dr. P.H., Joyce E. Dains, R.N., Dr. P.H., G. William Benedict, M.D., Ph.D. with illustrations by George J. Wassilchenko, C.V. Mosby Company, St. Louis, Washington D.C. and Toronto, 1987.

17. Holtzman, Arnold, PHD, **The Illustrated Textbook of Psychodiagnostic Chiromy in Analysis and Therapy**, ©2004, Greenwood-chase press, Toronto, Canada, and Holtzman, Arnold, **Applied Handreading**, (1983) The Greenwood Chase Press, Toronto

18. These differences were drawn into sharp focus as a result of Holtzman's unwarranted and inaccurate attack on Barack Obama on his web site at <http://pdc-psyche.net/obama.htm>. I have filed a more complete response on the International Palmistry Community forums list at http://www.internationalcollegeofpalmistry.com/forum/view_topic.php?id=3921&forum_id=137&jump_to=31805#p31805. But this work has caused me to reexamine the life work of Arnold Holtzman and call some of it into question.

According to Dr. Holtzman the germ of his ideas began to form on a visit to Israel's Tel-Hashomer (Sheba) hospital in the late 1960's (PDC Textbook p. 150). He wrote his doctoral dissertation in 1988. Even if he had started his work in 1966 that would provide him less than forty years from the formation of a germ of his ideas to the publication of his full work in 2004. This is where he claims that PDC is "scientific" and has a very high (over 80% and verging on 100%) proven record of accuracy (PDC Textbook pages viii, 152). He further claims that without exception PDC can be used to identify twelve (12) new Personality Disorders (PDC Textbook p. 344). He describes in his 2004 book some 59 hidden syndromes and twelve personality disorders. Except for possibly some Paranoid disorder and some otherwise unspecified cognitive disorder, I cannot find any of them in the DSM-IV, (Diagnostic and Statistical Manual of Mental

Disorders VI). All of these discoveries he apparently made without apparently publishing his studies on each of these new personality disorders in any peer review journal as none are cited as references in his book.

We ask: Where are all the studies and papers to justify his claims of the ability of PDC to diagnose these seventy one psychological conditions? Indeed, where are the papers and other peer reviewed scientific research to establish the existence of the fifty nine syndromes? This research should have caused a hot bed of interest and reviews in the fields of dermatoglyphics and psychology over the last half of a century. Unfortunately, he cites no papers on any of this research in his PDC Textbook.

In the eyes of one of his critics, Richard Unger, Dr. Holtzman has appeared to dismiss his critics from the world of hand readers as having insufficient knowledge of psychology to assess his work that can only be assessed by professional psychologists.

http://www.handanalysis.net/library/pdc_review.htm One wonders if he may make a similar defense to any criticism from professional psychologists, that they do not know enough about hand analysis to criticize his work. If so then he becomes a complete authority to himself.

He does not show much knowledge or appreciation in his book of the underlying research that preceded him in the field of psychological diagnoses based upon hand analysis. I looked for references in the PDC Textbook to Dr. Charlotte Wolf and the founders of psychological morphology referred to in her work, such as Julian S. Huxley, the French morphologists Dr. Leon MacAuliffe, and Siguard, the Italian school represented by Viola, Nacarrati and De Giovanni, the German doctor, a naturalist, a scientist and a psychologist Carl Gustov Carus, and the German who strongly influenced Dr. Wolff, Ernst Kretschmer. None of the works of these important pioneers in the field of psychological morphology are mentioned in Dr. Holtzman's bibliography (PDC Textbook page 436) though he does mention a publication from 1929 and the works of Freud. He does mention the work of Ernst Kretschmer as introducing him to the possibility of psychological testing through morphology. (PDC Textbook page 149-150). We may assume that he is at least aware of some of those who have preceded him in the field.

19. Martjin van Meensvort, <http://www.handresearch.com/hand/Evolute/overzichtEngels.htm>

20. Somogyi, Imre, **Reading Toes, Your Feet As Reflections of Your Personality** © Uitgeverij Fundament, Arnhem 1992 & 1997 Biddles, Ltd., King's Lynn, Norfolk, UK.

21. Elbualy, Musallam and Schindeler, Joan D., **Handbook of Clinical Dermatoglyphs**, University of Miami Press, Coral Gables, Fla., 1971.

22. Dr. Vijayan K. Asari, PhD, former Professor in Electrical and Computer Engineering in charge of the Vision Lab graduate program at Old Dominion University in Virginia and currently Ohio Research Scholars Chair in Wide Area Surveillance. Professor in Electrical and Computer Engineering, University of Dayton, and I are working together to develop pattern recognition software that I believe will either compliment or be superior to those of Mary Lai and GeneCode International Sdn Bhd. Both of their's appear to be based upon traditional ridge counting

dermatoglyphic concepts while mine is based upon many distinct patterns. I am also trying to develop new behavioral recognition tests based upon correspondences actually found through hand analysis, rather than trying to fit hand analysis into some previously determined patterns for psychological testing. All this requires one to consider the field as a primary scientific area of study, and not merely as an adjunct to other studies for statistical verification purposes. Similar work is also being done in India and Malasia by ThumbRule Dermatoglyphics Pvt. Ltd.