

## The Silent Witness

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## The Case for Forensic Art

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*“There is no landscape that we know as well as the human face. Twenty-five odd square inches containing the features is the most intimately scrutinized piece of territory in existence, examined constantly, and carefully, with far more than an intellectual interest. Every detail of nose, eyes, and mouth, every regularity in proportion, every variation from one individual to the next, are matters about which we are all authorities.”*

- Gary Faigin, Facial Expression, Watson & Guptil Publications, New York, 1990

I remember a book I had as a child; with pictures of people from all over the world, every face was so different and yet so heartbreakingly human. Later, in art school, when studying portraits of the masters, I was intrigued by how it seemed the model's very essence was captured in paint. But it wasn't until after working as a professional artist and educator for over twenty five years that I began doing portraits myself.

One day, after a long bout with the flu, too weak to do much of anything else, I picked up a pencil and sketched my first portrait. I loved the simplicity of it. There was no canvas to stretch, no research required or scaffolding to assemble. It was low tech, portable and immediate. Many of my projects would take months or even years to complete; the pencil drawing was a revelation!

After moving to Colorado in 2010, the idea hit me. It was a clear and perfect vision of how I could use my artistic abilities, my love of science and desire to give back... I was going to become a Forensic Composite Artist for Law Enforcement. Before long I was trained by Stuart Park Forensics whose classes have been sponsored by agencies like the United States Secret Service, the FBI and the Royal Canadian Mounted Police, and now work as a freelance Forensic Composite Artist for Law Enforcement in the greater Denver area.

So what exactly is a Forensic Artist?

A forensic artist is a person who assists law enforcement by combining artistic skills with scientific information to aid in criminal investigations and case prosecutions.

According to the International Association of Identification (IAI):

“It is the responsibility of the investigating officer to pursue every investigative lead. Where one or more witnesses are available to provide descriptions of an unidentified subject, a forensic/composite artist should be able to advise the investigating officer of the forensic art applications that would best contribute to the case. Where appropriate, the forensic/composite artist may also offer advice on the distribution, reproduction, and/or use of any image produced.”

-Standards and Guidelines for Forensic Art and Facial Identification, IAI

### **Services Forensic Artists Can Provide to Law Enforcement:**

There are four categories of Forensic Art: Composite Imagery, Image Modification & Image Identification, Reconstructive and Postmortem Identification Aids and Demonstrative Evidence. An overview of these four categories will be helpful to know, in considering when and how to apply the use of forensic art to your identification searches.

**Composite Imagery** are graphic images referring to any facial or full body image of a suspect or person of interest which is assembled with the assistance of a witness.

To determine if a witness is able to provide the information for a composite, the question should be asked if the witness would be able to recognize the suspect if they saw this person again. A YES answer means a composite can probably be done.

There are ways to help access memory without leading your witness even if he/she's not verbally expressive. But don't wait until you've exhausted all other means for identification because you want to capture the memory early. It's important to know that the witness should not be allowed to look at a lot of mug shots before doing the sketch. And although helping the victim heal is not the job of law enforcement, facilitating the production of a composite can help the victim begin to reclaim a sense of power and may elicit other new information in addition to the sketch.

The composite is divided into 3 stages:

Stage 1 is the initial interview with the witness/victim. Within this interview the witness/victim will be asked to look at reference photographs to assist in memory and aid in facial recognition. The reason for this is the memory of recognition is a much stronger memory, than the memory of recall. This interview will provide the artist with the reference photos used to develop the drawing. Stage 2 involves the artist sketching the selected features to form an initial composite. This initial sketch may be done at a later time as well.

Stage 3 is the viewing of the initial composite by the witness for final changes and completion. This entire process can take anywhere from two to four hours, depending on the circumstances and your witness. At the completion of the drawing, the composite goes into evidence.

Composites can:

- Eliminate suspects who don't look similar.
- Generate leads through recognition by others.
- Yield new information.
- Provide proof of deception.

A composite image may be produced either through the freehand drawing of an artist or through assembling an image with the use of computer software made for that purpose. A hand drawn sketch has an advantage over a photorealistic computer generated composite because there's a margin for interpretation in viewing a hand drawn sketch. In a photographic composite when precise details are added, they may result in a product that suggests an absolute identity. In any case, either method should be undertaken through the direction of a witness and accompanied by the use of an interview technique such as the cognitive interview.

When searching for effective computer sketch programs, it's important to find a product with tools for modification to the features that a system contains. Some programs require a facial feature to be totally removed and replaced rather than adjusted. One of the founding members of the IAI, George Homa suggests:

*"The kits are capable of constructing composites in less time than the freehand artist; however, the kits have a limited number of facial features and if the witness is unable to locate a precise feature, the request must be cancelled or the witness must choose another feature in place of one not available. When a replacement feature is used, the result is an inaccurate sketch. The freehand composite artist is unlimited in what can be drawn and can prepare a composite sketch exactly as described by the witness".*

While walking one morning to the Forensic Art training course I took in California, a detective also attending the class told me this story.

After a successful career, the senior composite sketch artist in his department retired, and because of funding cuts, he was not replaced. Before long, there was a witness to a robbery that got a good look at the suspect and was willing to give a description. The only problem was - there was no-one to do the sketch. Nevertheless, a drawing was created; depicting a stick figure with a gun. The sketch went out from the department to the other agencies causing a laugh, and a bit of embarrassment but also demonstrating the need for a trained composite artist.

A poor drawing will not generate any useful information. In order for the Composite Sketch Artist to be effective, training should include education in drawing techniques, facial anatomy, and the cognitive interview. A poor composite sketch can undermine a case in court.

**Image Modification and Image Identification** are methods of manipulation, enhancement and comparison of photographic images. For example photo-to photo comparisons, child age progressions, fugitive updates, composites from video and Line-up Reconfigurations. Faces are an important means of identification, but very often the work of cameras and electronics are considered the “final word” on the image of a suspect. Despite the reliance on these devices, they have limitations. All too often, surveillance images are unclear. The poor quality of these images can be due to any number of issues, including cameras that are:

- Not working properly
- Pointed at an angle that makes it impossible to view a suspect's face
- Out of focus, causing blurry or fuzzy images
- Set with bad lighting, causing shadows
- Poor quality

Within the last decade, video enhancement tools have become very helpful for those investigating certain types of crime. But there are times when enlargement of an image simply result in an unrecognizable blurred image. In these cases, a forensic artist can be used to produce the “enhancement”. With knowledge of facial anatomy, a forensic artist can often determine features and structures clearly enough to render a face forward portrait.

Still in its infancy is the idea of running hand drawn composite sketches through facial recognition software. But Michigan State University is working on developing an algorithm specifically designed to accommodate sketches. They have designed a Facial Recognition System (FRS) called Local Feature–Based Discriminant Analysis (LFDA). With this system in place, composites can be scanned into the program possibly increasing the odds of identification.

**Reconstructive and Postmortem Identification Aids** are techniques to aid in the identification of human remains in various conditions. Craniofacial Reconstructions and Post-mortem Reconstructions fall within this category. A facial reconstruction in two-dimensional form may be accomplished using photographs of a skull, which has tissue depth markers properly placed according to the anthropological report. The reconstruction may then be accomplished by hand drawing the facial image on a semi-transparent overlay, which has been placed on top of the life-sized skull photograph. This 2D method was developed by Karen T. Taylor.

A facial reconstruction in three-dimensional form is accomplished by creating a forensic sculpture using clay or Plasticine, the base of which is a cast of the skull, or in some cases, the original prepared skull. Either reconstruction is based upon the fact that there exists a predictable measurement of the overlying soft tissues on the skull. This method of identification is used when the facial features of the decedent are severely damaged or decomposed beyond recognition.

It's important to note that an exact likeness from a skull can never be attained but these methods can produce a face that will look similar to the type of face the individual had before their demise. In many cases, the actively searching family of a missing person will recognize the similarity and identification is made allowing for closure. Any reconstruction specialist will work closely with the forensic anthropologist, pathologist, and odontologist to establish sex, age, and ancestry of the deceased.

Enhancement of a post-mortem, unidentified facial image can be created through the use of photographic editing software. The resulting image is made suitable for media release to facilitate identification. Ideally, the forensic artist should visit the morgue before or at the time of the post-mortem examination to make an assessment of the case, acquire feature measurements, and

ensure appropriate photographs are taken, especially before the post-mortem exam. If the forensic artist is unable to visit the morgue, this assessing and measuring may be done through study and analysis of photographs of the body itself. If photographic material does not provide sufficient information, the post-mortem interpretation might not be possible.

Before photographs are taken, adjustments to the head should be made, if possible, to closely resemble the natural position in which the head was held in life. (The forensic artist, anthropologist, pathologist, and/or odontologist can advise on this matter).

**Age Progressions and Regressions:** The concept of updating the appearance of long-term missing fugitives has gained popularity in the last two decades or so. An age-progressed image may be drawn by hand, or a photograph may be enhanced by use of a computer. The first successful forensic art age progression was done in 1985 by two medical illustrators, Scott Barrows and Lewis Sadler. It involved 2 sisters who were abducted by their non-custodial father in '77. At the request of NBC, they prepared illustrations for a show called "Missing". Working from old photographs they developed sketches of the sisters. Within 10 minutes of the televised showing, police were getting calls and by 7:30 the next morning the girls and their father were in custody.

A typical computer-based technique will consist of a scanned image of the missing person at an age as close as possible to the age he was when he went missing. That image is then manipulated through the use of photo editing software, using age appropriate photographs of bloodline siblings or parents. Family traits may also be added within the paint capabilities of the program. The end result should be an age-progressed image of the missing person that adheres to the known principles of facial growth and aging. An age-progression of a child still under the age of two years should not be attempted. A minimum of two years should pass from the date of the most recent photograph of a missing child before an age-progressed image is attempted. This length of time will allow sufficient growth in the child to show visible changes.

It is important to note that neither the most skilled computer technician nor the finest portrait artist can produce a high quality age progression without knowledge of craniofacial growth.

Another advantage of using a forensic artist for an age progression is it illustrates the ongoing efforts to locate the suspect and in some cases, creates more time for investigators that are working on the case. Generating an age progression not only can show the judge "diligent effort to search" but in some cases the age progression will generate new leads by creating renewed interest in the case.

One example for use in an age regression is the National Center for Missing and Exploited Children (NCMEC) who invests considerable resources into investigating child abductions, disappearances and slayings. NCMEC uses a computer program to age regress photographs of officers who offer their own pictures as bait for online predators. They take contemporary photographs of adults and make them appear to be contemporary photographs of today's kids, perfect for not exposing a real child to danger and for taking to court once an arrest is made.

**Demonstrative Evidence** is visual information for case presentations in court as trial displays. Art for court presentations aids both judge and jury in the visualization and understanding of crime scenes or events. The forensic artist can assist with print ready graphic design, photography, illustration, and video production.

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It's clear that Forensic Art already utilizes scientific methods, but as future developments in biometric technology advance, hand drawn Composite Sketches may generate an even greater percentage of positive identifications before long.

- If you have a victim or witness that answers yes to being able to recognize the suspect if seen again, a composite can probably be made.
- Facilitating the production of a composite can often empower victims and elicit new information about the case while helping to identify the suspect.
- If you have unclear surveillance video, it may be possible for a face forward portrait to be drawn. According to Detective/Forensic Artist Paul Moody the success rate for generating a hit from composite sketches constructed with the help of a witness is 50%, while composites from video surveillance generate hits 60% of the time.

While science and technology will continue to be developed to assist law enforcement with their identification needs, don't forget the benefits that can be generated by a trained forensic artist as well.

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Training: (184 hours)  
 COFIG: Expert Courtroom Testimony  
 Karen Taylor – Master 2D Facial  
 National Center for Missing and Exploited Children (NCMEC) – Age Progressions and Regressions  
 Stuart Parks Forensics – Composite Drawing for Law Enforcement 1 & 2  
 CBI – NamUS  
 Denver Division of the FBI – Advanced Crime Scene Sketching

Cynthia Marsh is an IAI Certified Forensic Artist

And holds Associate Memberships to the  
 International Association for Identification (IAI)  
 And the Rocky Mountain Division of the IAI

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#### References:

1. Standards and Guidelines for Forensic Art and Facial Identification, IAI
2. D. Paul Moody, Forensic Artist/Detective, Violent Crimes Division, Palm Beach County Sheriff's Office
3. Anil K Jain, Brendan Klare, Unsang Park, Michigan State University. "Face Matching and Retrieval in Forensics Applications"
4. Karen Taylor, "Forensic Art and Illustration".

For more information on Forensic Art:  
[www.theiai.org/disciplines/art/index.php](http://www.theiai.org/disciplines/art/index.php)

To see some of Cynthia's art go to:  
[www.cynthiamarsh.com](http://www.cynthiamarsh.com)

