

## The Forensic Artist

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### Opinion Article

In a grocery shop a customer suddenly threatens the cashier with a knife. She should give him all the money in the till. The cashier does not react immediately and the attacker becomes nervous. He stabs the cashier and seriously injures her. He runs without taking any money. The attacker is unknown. There is, however, a witness statement about his appearance. The description is not very useful though: male, 20 to 30 years old, approx. 175cm to 180cm tall, dark hair and dark eyes. But the witness claims he would definitely be able to recognize the attacker in a photo, and moreover – he can give a detailed description of the attacker. He knows exactly what he looked like.

Now the talents of the police artist are needed. He has the job of producing the similar looking composite possible of the attacker together with the witness from his memories. True to the phrase ‘A picture says more than a thousand words’ the composite can now be used to find the suspect. Unfortunately, it is in the nature of things that many people could look similar to a composite. When working a case this means following up and checking out information received. Composites are an indispensable part of an investigation. The attacker was quickly caught. The cashier survived.

What is a police composite artist? Is it a profession? And if so, how and where can it be learned? Can anybody do it or what is needed to be able to do the job of a police artist? What kind of a person can construct facial composites: artist, psychologist, police officer – or all three at once? Facial composites are often seen in newspapers or on television. But hardly anybody knows who or what lies behind them. “Fetch the police artist. We need to know what the suspect looks like.” is often heard in crime series when the suspect is unknown but there is an eyewitness.

It is not the same as usual questioning in which normally any investigator can interview the witness. In order to create an image according to witness statements specialists are needed. A specialist is able to produce something that can be shown around afterwards like a photograph. “That’s what the person we want looks like. Does anybody know him?” The question is raised as to what defines a good police artist and whether anybody can be one.

The standards of quality laid out here have only been established over the last few years through advances in hard and software and new scientific discoveries. They are principally a foundation for training, advanced training and the contents of teaching courses. Established police artists do not need to stop their activities if they do not meet all these standards. In principle anybody who can communicate with a witness and either has artistic talent or can effectively use the appropriate software, can produce a facial composite. In order to professionally achieve the best possible result however, continual improvement in knowledge and skill is essential. Those with natural artistic talent and / or an affinity with computers and software have a

clear advantage. All the necessary skills and the knowledge required for constructing composites, however, can be learned. The standards of quality are divided into four categories: the pre-conditions, advantageous skills, fundamental knowledge and further knowledge.

The fundamental knowledge is subdivided into: policing skills and artistic principles, psychological / scientific knowledge and the principles of technology and tools.

### Pre-conditions

#### Computer skills

It is probably easier for many people to use software than to draw like an artist with a pencil in one hand. Nevertheless it is also necessary to have enough skills and experience in working with hard and software. Confident use of input devices, as a minimum mouse and keyboard, should not present a problem. Simple and general tasks, such as printing and sending of files and also minor technological problems should be mastered without too great time loss.

### Imagination and creativity

An ability to visualize a witness’ description can only come from having plenty imagination and being on the same wavelength as the witness. Creativity stimulates the possibility of depicting this vision in the best and quickest way possible. Ready-made patterns cannot be relied on as composite construction has many variables. Each appearance, each witness, and each production is different and unique.

### Good listener

During a composite construction session high concentration over several hours can, under circumstances, be demanded in order to follow the statements and descriptions of the witness. It is at times a very exhausting job. It would be reprehensible to miss and not record important information. It is the witness and not the police artists who saw the suspect. Initially the police artist should only listen. If the witness wanders off topic suitable questions can bring the interview back on track. Personal interpretations and suggestions are not helpful and also not valid.

### Advantageous skills

### Interviewing experience

Composite construction with a witness represents an interviewing situation. Those who have completed police officer training should have already learned the theoretical knowledge in the areas of investigation and interview with a witness. Additionally some years of

practical experience are very helpful in implementing and deepening this knowledge. The more routine in working with a witness there is, the easier it is to concentrate on the actual production of the composite. This is particularly in difficult...

### Artistic talent

As composites can also be produced using computer software, basic artistic talent is not that necessary. The production is mainly based on putting templates together. This does mean that if there is not enough material available, not everything can be depicted with as much detail as the witness provides. In these cases it is advantageous or even necessary for these parts to be recreated digitally or by hand or that the templates are altered accordingly. The basic principles of shadowing taken from drawing techniques can be helpful in these situations. Therefore there is an advantage for those who have already learned some drawing techniques and / or have artistic talent.

### Fundamental knowledge

Legal principles for facial composite production and release Legal requirements vary according to country or individual federal state not only for composite construction. A basic principle of this work knows how and when which measures may be taken. A police artist is primarily a service provider for the leading officer who decides upon the actions to be taken. Nevertheless a police artist should actively provide information for colleagues as the specialist.

### Interviewing techniques

Which questioning techniques and methods of approach are best suited for getting the desired information? There are different ways of interviewing depending on the type of information and whether the interviewee is the victim or a suspect. The police artist also needs to know, what could be the most effective way to get required information. A comprehensive description of the person being looked for is needed. Differing questioning techniques and ways of approaching the interviewees are needed depending on whether they are for example, children or older people, victim or suspect and on the severity of the mental and physical effects of the crime.

### Principles of drawing

A police artist does not necessarily have to be able to draw when using good software. Different techniques and standards from the art of drawing must, however, be used when producing a composite.

### Proportionality

The laws of proportionality and ratios state where and how facial features should be positioned. Anatomical errors can thus be avoided. Before a drawing is done the ideal positions for the individual facial features should first be sketched on a piece of paper. The artist then has a basic frame upon which can be built. The deviations from these positions are later decisive for recognition.

### Ageing

Frequently, when individual features are put together age characteristics disappear. After facial construction the age has to be adapted. Age characteristics such as wrinkles must be recreated or

repositioned. It is also possible for the witness to have initially misjudged the age and the picture needs to be corrected.

### Phenotypes

The appearance of people varies depending on which part of the world they come from. They are marked by regionally typical characteristics. For example, there are several hair, skin and eye colours, differently sized facial features and even varying bone structures in the skull. This makes it possible to differentiate the origin from Eastern Europe, Western Europe, South America and many other regions. Should a witness be able to match a phenotype to the person being looked for, a corresponding selection of comparative pictures can be presented. This limits the appearance considerably and makes producing a composite much easier. Making changes subsequently to the appearance is not easy, however, with knowledge of typical characteristics not impossible.

### Shading

Principally templates of people or individual facial features are used to create composites. Very often though the features are same but they are not 100% identical. Some features are more distinctive and more pronounced and others are less striking. Prominent features and indentations are shown using color gradients between dark and light. How and to what degree color gradients should be used belongs to the most important knowledge of how to draw faces.

### Psychological/Scientific knowledge

Research carried out in psychology in recent years has made considerable progress. Particularly knowledge concerning brain function and recognition is of great use for constructing composites. Knowing how information is stored and retrieved from the brain makes it possible to adapt accordingly. Comparisons between recently produced composites and earlier composites show significant improvements in the degree of similarity between the composite and the actual person.

### Witness capability

When is a witness capable, able or no longer able to produce a composite? This decision depends on many factors. This assessment should be left entirely to the police artist as to the prospect of getting a successful composite. As soon as the circumstances are clear a rough assessment can already be made.

### Brain function perception and recognition

How and when are people stored in our memories? What is needed to be able to recognize them again? How does our brain react when something is stored and how is the memory retrieved? These are very interesting and exciting questions which can now be explained very well in psychology.

### Memory techniques

Our brain is a huge storage device. Memory techniques are used to get at the right information. Simple questioning activates the area in the brain where particular places or objects are stored.

## Cognitive interview

Cognitive interviews are a relatively new and comprehensively developed interviewing method for getting maximum information. In a modified form this is the interviewing method for constructing composites. The circumstances are usually already known. The police artist uses this information and builds on it working in the direction of the detailed appearance of the person being looked for. Initially this is done verbally but then relatively quickly visually in the form of examples.

## Dealing with traumatized witnesses (e.g. sexual crimes)

What a victim experiences can be of great mental stress depending on the type and severity of the crime. Sometimes it can even lead to post traumatic stress disorder. Knowledge from the area of psychology on how to deal with such witnesses is of great importance. Inappropriate behavior can make producing composites impossible. With knowledge from modern science it is now possible to work with emotionally traumatized witnesses more thoroughly and more understandingly.

## Dealing with children, older people and multiple witnesses

Memory function and recognition in children and significantly older people works differently, when compared to adults. Composites can nevertheless still be produced with them. However, questioning suitable for their age is necessary. If there is more than one victim, several witnesses or several suspects, the most appropriate method needs to be found and agreed with the leading investigator.

## Basics of technology/tools

### Basics of composite software

When producing a composite the artist's attention should be focused entirely on the witness. Being able to use the software available or even working efficiently with a pencil is a must. Lengthy considerations or several attempts to get something right are not helpful and hinder the working process.

### Using image databases

Image databases belong to more methods of producing composites. These ideally include a multitude of templates and examples to enable every appearance to be depicted. Software with limiting functions spares the witness having to view unnecessary material, which does not match the person being looked for. Data structure archive searching knowledge is needed.

### Using the Internet

There are not always enough examples available. Particularly for unusual appearances or unique objects it is virtually impossible to provide all variations. Now, a considerable amount of image material can be found on the Internet, which can be of great use for composite production (With observance of data and copyright protection).

## Further knowledge

Composite production is not limited to producing portraits of victims. There are other forms of searching for people using individual

character recognition such as profile imaging or full-length body images. As these possibilities are relatively new they are currently seldom used. Additionally, not all police artists are able to cover all these areas.

## Profile imaging

Profile or semi-profile imaging often complements portraits. The lateral view can for example highlight an unusual beard or a particular shape of nose better than the frontal view. This method of looking for someone is rarely used by itself due to the potential reduction in recognizable features.

## Full-length images and group pictures

Full-length photos take into account particulars of height, stature and clothing and not just facial features. Group pictures are also useful particularly when there are significant differences in height. In-depth knowledge of proportionality is needed for this.

## Facial reconstruction

Facial reconstruction does not mean the reconstruction of facial soft tissue, in which the soft tissue is positioned on the skull in order to reconstruct that face. Far more it is a form of digital corpse cosmetics (facial) or reconstructive thanatopraxis, in which a corpse is made presentable again. If the face was badly damaged in an accident or through other circumstances, it cannot be published for ethical reasons and due to a lack of recognizable features. With the help of the body parts still in place and intact combined with anatomical knowledge a face can be reconstructed. Thereafter is used in the same way as a composite for identification.

## Reprocessing digital images

Nowadays, amongst other things surveillance cameras are used in known crime hotspots. Identities are hard to determine, however, if the suspects are not recorded frontally, are masked or the images are blurred due to low quality cameras or other influences. Specialist software can be used to edit such images or they can be improved through drawings. If there is enough image material available for masked people there is the possibility of producing a composite if combined with supplementary information from eyewitnesses.

## Ageing

When looking for people who have been missing for a long time it is necessary to match their current appearance to an earlier image by ageing. This is mostly the case for missing children and youths or escaped prisoners.

## Drawings of objects

Many objects are unique productions and have an individual appearance. Drawings, for example of jewellery, are therefore extremely suitable for use in searches. Reference images can often be found on the Internet.

Progress in science, particularly in the field of psychology, the development of technological possibilities and the continual gains in experience will never stop. Therefore, these demands for quality can never be brought to a conclusion. They will always change and expand. We are looking forward to what the future will bring. It will be

important to keep our eyes and ears open and to continually gather information from anywhere and everywhere, which could be important for the field of composite sketching.

### Education

The State Office of Criminal Investigation with the Police Academy Baden- Württemberg/Germany supports different trainings for police artists, basics for beginners, using Photoshop for artists and the advanced digital composites creation course. In 2015 will be the publication of the book “Composite Imagery” (supposed title) by Rainer Wortmann and Dr. Heike Schmidt. The book contains the current stand of knowledge from the psychology sciences and approx.

20 years of professional experience in the field of composite sketches. Additionally, current software products and the art of drawing are looked at in terms of producing sketches. Both tactical and process knowledge as well as anatomical principles are discussed. This has not been written only for the European market. It is intended to assist composite artists and potential witnesses the world over. The science of brain research and the development of methods for producing composite sketches are still in their infancy. However, in the last 15 years there has been tremendous progress. We are all fascinated to see how crime fighting will develop in the future, particularly with regards to the possibilities of converting memories into realistic images.