Composite Images

The Handbook for
Forensic Artists
and
Witnesses

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The authors would like to thank their families and everybody who helped make this book reality.

We know who you are!

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Foreword

Two investigators are talking, "Have we got a description of the offender?"; "Even better – we have a picture – a composite! Now the offender has got a face!"

A description of a person or an object made with only a few words is generally speaking insufficient or inexact. A facial composite means that a witness's memory can be turned into a picture that can be shown around. The viewer now has the possibility of comparing this picture with known people or objects. Unfortunately, as a facial composite represents a subjective reproduction of a memory, it cannot be a perfect image of who or what is being looked for. However, with a good witness it is possible to achieve a high degree of similarity or to recreate individual identifying features. This makes it possible now for someone to identify who or what is being sought after and is in a position to give helpful information leading to identification.

But, how do I become a good composite sketch artist?

This book can give composite artists all the necessary knowledge and a foundation for their work. All different kinds of methods used in creating facial composites will be looked at. It is irrelevant whether the composites are created using software on a computer or drawn by hand.

Successfully creating a facial composite is just not possible without a good witness. Therefore, the second part of this book is aimed at all potential witnesses such as bank employees and sales staff and all those who would like to train their brains optimally for recognition. This section will show in a simple way how people and objects can be memorised so well that they can be visualised later.

The authors

Rainer Wortmann is a Detective Chief Superintendent in the police records department at the police headquarters in Stuttgart, Germany. He has been creating composites since 1997.

After his apprenticeship learning vehicle bodywork and employment as a truck driver at Stuttgart airport, he joined the police in 1991. After two and a half years training and four years service at the Stuttgart-Degerloch police station as a beat officer he switched to the criminal police department (equiv. Brit. C.I.D. or Amer. F.B.I.). There he was heavily involved in the development of software for digitalising the recording of interviews.

Between 2001 and 2004 he studied a degree in civil administration for upper grade police civil service at the Police College for Higher Education.

Since 2007 he has taken on the position of Facial Composite Department Coordinator for Baden-Württemberg. In this role he is responsible for the training, advanced training and the equipping of approx. 40 police artists. In 2009 he was elected as the Deputy Director of the National Facial Composite Work Group, which works towards trans-regional future-oriented standards of quality and collaboration.

In 2008 Rainer Wortmann successfully completed a training course at the F.B.I. Academy in Quantico, Virginia, U.S.A. to become a forensic artist (police artist). This was followed by a special Course for Ageing and Facial Reconstruction at the Anthropological Institute, University South Florida, Tampa, U.S.A. initiated by the National Center for Missing and Exploited Children.

Since 2013 he has been at the Baden-Württemberg Department for Criminal Investigation as a specialist for

composite sketching.

D/C. Supt. Wortmann trains police artists both nationally and to a certain extent internationally for several European countries. He organises and holds conferences, appears regularly worldwide as a speaker at conferences on the subject of facial composites and maintains a constant presence in the media, on the radio and on television.

Not only that but Rainer Wortmann is also a portrait artist specialising in charcoal and graphite drawings. A selection of his works can be seen on his website www.rainerwortmann.de. Collections of his portraits are regularly presented at exhibitions and can usually be bought in support of charitable causes. In this way he supports victims of crime – in addition to his normal police work.

Dr. Heike Mendelin is a qualified psychotherapist with a degree in psychology and has a doctorate in composite sketching. After her psychology degree she worked at the University of Cape Town as a lecturer and researcher establishing a long and close working relationship with the South African police in the field of composite sketching. On the one hand, her research looked at experimental studies on topics such as the cross-race effect, the recreation of the perception context for improving a composite sketch, interviewing methods. etc. On the other hand, as a result of her work with the South African police she did studies on compiling actual composite sketching, the framework and the quality of composite sketching in order to improve the quality of training police artists. Dr. Mendelin regularly presents her work at conferences.

Since 2009 she has also been working as a lecturer at the Police College for Higher Education in Baden-Württemberg in Germany.

In addition to her qualifications as a psychotherapist with a degree in psychology she also completed further training

in the fields of relaxation techniques and interviewing. For years she has also been a hypnotherapist. Alongside her lecturing activities Heike Mendelin is currently working at her own practice as a psychotherapist with a degree in psychology.

Part I

A THE COMPOSITE SKETCH ARTIST

1 Introduction

What is a composite artist? Is it a profession? And if so, how and where can it be learned? Can anybody do it or are certain prerequisites needed? What kind of a person can create facial composites: artist, psychologist, police officer – or all three together?

   Composite sketches are often seen in newspapers or on television. But hardly anybody knows who has done them or how much work has gone into them. "Fetch the police artist. We need to know what the offender looks like", is often heard in crime series when the criminal is unknown but there is an eyewitness.

   Creating a composite sketch is not the same as the usual police 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 has to be able to produce something that can be shown around afterwards like a photograph. "That's what the person looks like. Does anybody know him?"

2 A dream job?

When I, Rainer Wortmann, started training as a police officer, I had already heard a little bit about composite sketching. It was one of the topics relating to investigation

and interviewing methods. However, I had no idea how it all worked and much less imagined that I would one day be in the position to create them myself.

My first experiences as a police officer after nearly two and half years training were made at the police station on the outskirts of Stuttgart. For four years I went out on the beat on both day and night shifts through several urban districts and dealt with road traffic collisions, calmed arguments, interviewed victims of a multitude of crimes, looked for evidence at break-ins, stopped drunk drivers, investigated environmental crimes, checked truck drivers, and much more. The main role of the uniformed beat police officer is to always be the first on scene and to carry out the first assessment. That is, to find out exactly what has happened or what could happen and to take the first essential measures. It is then the job of the criminal investigation department to carry out further investigations and to solve particularly serious crimes.

The criminal investigation department is subdivided into the investigating departments and the service departments such as forensic science and the records department. This last department, which is responsible for all aspects of identifying criminals, was of special interest to me. In particular, the introduction in the mid 1990s of digital image production using computers had opened up new possibilities in the hunt for criminals. Additionally, software for creating facial composites was developed for when the police don't have a photograph of the offender. Up until then there had only been a few colleagues who were able to create facial composites using a transparency system or by doing drawings by hand. Freelance artists had not been used for a long time due to data protection, cost considerations and most importantly their lack of interviewing techniques.

Now, however, anybody who was able to use the software, after a briefing and some practice, could create facial

composites. It became one of the standard tasks that officers carried out at the records department in Stuttgart. And it was inspiring to help develop the software. Graphics programs were now no longer only being used to touch up holiday photos, but also to fight crime. The number of crimes being solved rose. This was particularly true for crimes where the investigators had no other leads for finding the offenders.

Unfortunately at this time, there were no special training courses specifically for learning how to create facial composites. At most, there were some courses abroad. Now, however, there are approved training and advanced training courses for this specialist police work in some regions of Germany.

Nowadays, creating composite sketches is an inherent part of police work. Composite sketching can be found located either at the forensic science department, at local police stations or at police headquarters. Or centralised as special departments at regional headquarters. Police artists are, for the most part, police officers, who after their training have chosen to take this path in their professional career. But, there are also colleagues who decided to join the police to do this specialist work after studying graphic or fashion design.

It is not so easy to become a police artist once the decision has been made. Composite sketch artist as a profession does not exist in its own right. There is no specialised degree course. Either a professional career can be started as a police officer with the aim of eventually ending up in the forensic department. Or an application is made after, preferably, studying graphics, for one of the few positions available at the State Office of Criminal Investigation.

The situation in other countries is similar to the one Germany. Composite artists are employed almost

everywhere by the police. Many of them create composite sketches in addition to their other tasks. It becomes a full-time job when there is sufficient demand and there are only a few or just one police artist in the department.

In some countries, such as Germany or the U.S.A., the authorities and experienced composite artists offer special training courses for this branch. Successfully completing such courses together with many years of experience makes a composite artist more professional and his or her services more in demand.

Of course it is a dream job! All over the world even being a police officer or working for the police is one of a child's biggest dreams because police are heroes again and again in all kinds of situations and help people in trouble. However, police artists have additional specialist skills. They help in those cases which seem impossible and where nobody else can.

3 Case study 1: Several cases of attempted murder – Rainer Wortmann's first case

A young man takes the tram home at night after shopping in Stuttgart's city centre. He is nearly alone in the compartment. He does not pay any attention to the other people who are travelling with him. After arriving at his stop in the southern outskirts of the city he is at first the only person to get off. Just before the doors close again another, darkly dressed, person suddenly gets off as well. The young man doesn't notice him. It is only a couple of hundred metres home. The poorly lit pavement is narrow and leads through a small wood past some allotments. The unknown person follows him for a while at some distance. Then he

increases his speed and gets closer and closer to his victim. At first he walks past his victim but after a few metres he turns around to face him. He has a knife in his hand and suddenly stabs him several times. He then disappears and just leaves the young man lying on the ground.

The victim is lucky. He is found quickly and taken to hospital. He survives.

It was not a one-off incident. He was already the fourth victim. The attack was nearly always the same. The attacker always travelled as a normal passenger on different trams. He waited until somebody got off alone at a remote stop. He then got off as well and followed his intended victim. If the location seemed opportune, he would carry out the attack. Luckily, there had so far been no deaths. All the victims had survived the treacherous attacks.

A few days later the young man was released from hospital. He then went to the police to help create a facial composite.

It took 6 hours to complete the image. Due to his injuries, he needed several breaks.

But, it was worth all the hard work! The composite was released and somebody reported vital information that led to the identification of the attacker. He was quickly caught. It turned out that he was also under suspicion for many other unsolved cases of bodily harm and other assaults.

The attacker was sentenced and taken into custody with psychiatric care. He was off the streets and could no longer hurt anybody.

4 Standards of quality

The question is raised as to what defines a good police artist and whether just anybody can become one. However, this

book will not be looking at the application requirements for a police career or a position at the police authorities responsible for creating facial composites.

The standards laid out here have only been established over the last few years through advances in hardware, 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.

Generally, anybody who can communicate with a witness and either has artistic talent or can effectively use the appropriate software, can create a facial composite. In order to achieve the best possible professional 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 creating composites, however, can be learned.

The standards of quality are divided into four categories: prerequisites, advantageous skills, fundamental knowledge and further knowledge.

A brief overview of the different categories is given below.

4.1 Prerequisites

Computer skills

Basic knowledge of I.T., such as being able to use hardware and commercially available software, is essential. This is because facial composites might be created digitally or the hand drawings might have to be digitally documented and sent by e-mail.

Imagination and creativity

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

Good listener

Composite sketch artists need to maintain a high level of concentration over several hours. During a session to create a composite sketch the artist has to be able to follow all the statements and descriptions the witness makes and record them. Only the witness knows what the criminal looks like. The information given or any statements that are uncertain must not be altered or supplemented with personal experiences, interpretations or suggestions.

4.2 Advantageous skills

Interviewing experience

Creating a composite sketch with a witness represents an interviewing situation. Those who have completed police officer training should have already learned the theory of investigation and interviewing a witness. Additionally, several years of practical experience is very helpful in implementing and deepening this theoretical knowledge. The more routine it is working with a witness, the easier it is to concentrate on the actual creation of the composite sketch. This is particularly important with witnesses who have difficulties with the investigation of the crime.

Artistic talent

As composites can also be created using computer software, basic artistic talent is not as necessary as it used to be. The sketch is mainly based on putting templates together. However, 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 be altered accordingly. The basic principles of shading taken from drawing techniques can be helpful in these situations.

4.3 Fundamental knowledge

Basic knowledge forms the largest part of this book and is subdivided into policing and drawing skills, psychological / scientific knowledge and the fundamentals of technology and tools.

Policing skills

Legal principles for creating and releasing facial composites

A composite sketch artist is primarily a service provider for the investigating officer. Nevertheless artists should know the legal side of their profession.

Interviewing techniques

Which questioning techniques and methods 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 an offender. The

composite artist also needs to know what the most effective way is to get to the information needed. 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, the victim or the criminal and on the severity of the mental and physical effects of the crime.

Public relations

Creating composite sketches is by definition high profile due to its images of wanted people and objects. The media support police work by publishing the images. However, most people do not know very much about creating sketches or the behind the scenes work. Interviews give artists the possibility of explaining to interested people what the basic principles are and how composites are created. By spreading this information and the knowledge of what is important, future witnesses will find the decision easier to make as to whether or not to have a go at creating a composite together with a professional. For this reason artists need to learn and train how to work and deal with the media.

4.4 Principles of drawing

There are different techniques and standards from the art of drawing that must be used when creating a composite such as the principles of proportions or the principles of ageing. However, a composite artist does not necessarily have to have drawing talent when using good software.

Principles of proportions

The principles of proportions 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 to build upon. The deviations from these positions are later decisive for recognition.

Principles of ageing

Frequently, when individual features are put together age characteristics such as wrinkles disappear. After creating a facial composite it has to be suitably 'aged'. Age characteristics must be created or repositioned. It is also possible for the witness to have initially misjudged the age and the image needs to be corrected.

Phenotypes

The appearance of people varies depending on which part of the world they come from. They are distinguished 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 whether someone originates from Eastern Europe, Western Europe, South America or any other region. 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 possible physical appearances considerably and makes creating a composite much easier. Although making changes to the appearance subsequently is not easy, it is not impossible with knowledge of the typical characteristics.

Shading

Templates of people or individual facial features are always used to create composites. They are used to define the description of the person and as building blocks for recreating the person being looked for. Very often though the features are not 100% identical. Some features are more distinctive and more pronounced and others are less striking. Prominent features and indentations are shown using colour gradients between dark and light. How and to what degree colour gradients should be used belongs to the most important knowledge of how to draw faces.

Techniques for drawing by hand and digital drawboards

In order to be able to use the knowledge defined in the principles of drawing it is important to know how and with which tools. The teaching content comprises the use of digital drawboards and the use of sketch pencils.

4.5 Psychological / Scientific knowledge

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

Witness capability

Who are the best witnesses for creating a composite sketch? Are uninvolved bystanders or affected victims better? How long ago can the incident be? How old does someone have to be? These and many other factors are crucial for achieving a successful composite sketch. As soon as an artist is aware of the circumstances, he or she can make a rough judgment and support the leading investigator in deciding how capable the witness is.

Brain functions of perception and recognition

How and when are people stored in our memories? What is needed to be able to recognise 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 with psychology.

Memory techniques

Our brain is a huge storage device. Memory techniques are used to retrieve 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 best interviewing method for creating composites sketches. The circumstances are usually already known. The artist uses this information and builds on it working toward a detailed

appearance of the person being looked for. Initially this is done verbally but then switches relatively quickly to visual methods using templates as examples.

Dealing with traumatised 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 field of psychology on how to deal with such witnesses is of great importance. The wrong behaviour can make creating composites impossible. It is now possible to work with emotionally traumatised witnesses more thoroughly and more understandingly using knowledge from modern science.

Dealing with children, older people or multiple witnesses

Memory function and recognition in children and significantly older people work differently than in youths and adults. Composites can nevertheless still be created. However, questioning suited to their age is necessary. If there is more than one victim, several witnesses or several offenders, the most appropriate method needs to be found and agreed with the lead investigator. For example, witnesses principally need to be interviewed separately.

Simulated crimes

Is it possible to recognise that somebody is not telling the truth? What motives are there for inventing circumstances? What is the correct way of dealing with people who are not telling the truth? Everybody deserves to be taken seriously.

There are many reasons for lying that first need to be known and understood. At the very least a simulation can be seen as a training exercise for artists.

4.6 Basics of technology / tools

Basic knowledge of facial composite software and the use of databases for managing image libraries is just as important as the ability to find further example templates on the Internet (while observing copyright and data protection laws).

4.7 Further knowledge

Creating a composite sketch is not limited to producing portraits of criminals. Each unique object, a particular constellation of a crowd, unusual clothing or a certain side profile of a face can all be put into a composite sketch with a high level of recognition. As these possibilities are relatively new they are currently seldom used. Additionally, not all artists are able to cover all types of sketch.

Profile views

Profile or semi-profile views often are used to complement 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 just by itself due to the potential reduction in recognisable features.

Full-length portraits and group pictures