MedicalXpress

Why police sketches sometimes don't work

May 11 2011, By Tom Avril

When they were investigating the series of attacks on women in Philadelphia's Kensington neighborhood, police stopped dozens of black or Latino men who were thought to resemble a face in a forensic sketch. The image of a guy in a hoodie, drawn by a trained artist who interviewed one of the victims, was a high-profile use of an investigative technique that dates back more than a century.

But ultimately, police arrested a suspect, Antonio Rodriguez, by using a tool of more recent vintage: DNA analysis.

So, does he look anything like the guy in the sketch?

In an informal survey of a dozen neighborhood residents, most said no, whereas police who worked the case were divided.

Manuel Enrique Sanchez, one of the men police stopped during their investigation, saw no resemblance, nor did he think his own face was similar to either the suspect's or the sketch. Except that all three were men of color wearing a hoodie - not an unusual sight in Kensington.

"Everyone fits that description," Sanchez said.

In repeated studies, psychologists have found that people are not very good at recalling a face after just one encounter. And accuracy is even worse if the witness has to describe a face so someone else can draw a picture - whether with a pencil or with one of various available computer programs.

That's because for most police sketches, called composites, the witness is asked to pick out features one by one - eyes, nose, mouth, and so on - so the face can be constructed. Yet, researchers have found that our brains do not perceive a face like that, as a laundry list of parts, but as a coherent whole.

"I don't see eyes, a nose and a mouth," University of Florida psychologist Lisa E. Hasel said. "I see a face."

It is not just a topic for academic study. If police have an inaccurate sketch, they can't find their target as quickly. And innocent people who are wrongly interrogated would just as soon be left alone.

Sanchez, 24, who said police threw him against the wall and searched him before telling him what it was about, has filed a formal complaint.

Charlie Frowd, a British researcher who has studied techniques for improving composites, said a good way to evaluate them is to see whether they can be correctly identified by someone who already knows the subject of the sketch.

By that standard, laboratory studies have found that the worst accuracy is achieved by computer programs that ask the witness to pick out features one by one, said Frowd, a University of Central Lancashire psychologist. It depends on how soon the witness is asked to recall a face, but when they wait a day or two, as often happens in a real-world investigation, these computer composites are recognizable just 5 percent of the time, he said.

Composites by human sketch artists get better results, achieving about 9 percent accuracy, Frowd said. That's probably because, although they ask witnesses about individual features, artists are better at developing a face as a coherent whole, he said.

Frowd and colleagues report that, in recent years, they have come up with an even better method. It's a computer program, but one that asks witnesses to pick out entire faces, more in line with how the brain perceives them.

Witnesses repeatedly pick out faces from screens-full of alternatives, and the program, called EvoFIT, periodically "blends" these picks to arrive at something close to the person's memory.

The British group's method has reported 25 percent accuracy in lab studies, and with modifications, they have achieved even better results that await publication, Frowd said. The system is now in use by 12 police forces, including in Britain.

Other scientists have not yet replicated these results, apparently because such research receives little funding. But EvoFIT does seem promising, said Steven D. Penrod, a psychology professor at John Jay College of Criminal Justice, City University of New York, who is familiar with the studies.

Law enforcement officials say it isn't necessarily fair to judge a composite by whether the face is recognized by someone who knows the subject. Publicizing such images is useful just to help narrow the field of potential suspects, said Sgt. John J. Rauchut, who is in charge of the Philadelphia Police Department's graphic arts unit.

"It gives somebody an impression to go on," Rauchut said.

The man who drew the Kensington sketch, Roderick Scratchard, studied graphic design and illustration at Temple University's Tyler School of Art and has been with the Philadelphia police for 30 years.

He draws about 50 composites a year, he said, most of them for sexual

assault cases. Witnesses meet with him in a quiet basement studio at police headquarters, where they look through old photographs of people who match the attacker's rough age and race.

They pick out facial features - say, a nose from one face, a mouth from another, a head shape from a third - so that Scratchard can do his job. All the photographs have previously been scanned into a computer, so he can assemble a preliminary face on his screen and then sketch a final version in pencil.

Witnesses are free to modify a given facial feature, instructing the artist to make eyes closer together, say, or more squinted. Scratchard keeps a book of some of his old composites alongside the photos of those who were eventually arrested, and indeed, some of the sketches bear a strong resemblance to the actual perpetrator.

In the Kensington case, Scratchard said, he believes his composite sketch looks like Rodriguez, the man who is in jail awaiting trial, though he said the eyes and nose were a bit off.

Among the detectives who worked the case, several white officers said they thought the sketch was a good likeness, while several black officers said it was not. Past research has found that people are not as good at identifying those of other races.

Still, Scratchard says, sketches have value. "The composite is not meant to be a portrait. It's meant to be a characterization," said the artist. "Just because one feature might be wrong doesn't make the composite wrong."

Scratchard drew the sketch after talking to one of the Kensington victims who was raped and choked to unconsciousness, but survived. He later did a slightly modified version after talking to a second victim. At the time, police did not know if the person depicted in the sketch was

the same man who was responsible for killing three women.

Now they believe the attacks were the work of one man - Rodriguez. They arrested him in January because DNA found on the homicide victims matched Rodriguez's DNA in a police database, authorities said.

In this case, it seems, a sketch did not help. That was no surprise to neighborhood residents.

At the corner of Kensington and East Allegheny avenues, The Philadelphia Inquirer showed images of Rodriguez and the sketched face to 12 people. Just one person said the two faces looked like each other, nine saw no resemblance, and two saw "a little" resemblance.

Yet, Francisco Leon, one of those who saw no resemblance, said the police have to use the tools available to them.

"They're looking for a rapist," Leon said. "They're doing what they've got to do."