



### **Forensic Art: age progression**

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*February/March 2009*

**Surely, as we get older, we will all get the "lines on our face" we call wrinkles, but to a forensic artist who is working on an age progression or a facial reconstruction, the signs of ageing go much deeper than a crack or crease or fold in the skin.**

To an artist, a line can be an outline or contour of a shape, part of a decorative design pattern, a means for adding texturing to a drawing, a shading technique used in multiplicity, or a sign of ageing in a portrait.

According to Gary Fagin's *The Artist's Complete Guide to Facial Expressions*,<sup>1</sup> "... an expression leaves its mark on your face if you repeat it often enough." Whereas, Richard Neave<sup>2</sup> states that no one grows old the same.

A forensic artist doing an age progression of a missing person's face has to take into consideration a great deal of information about that person, including lifestyle, personal habits, and family genetics. Family photographs can assist the artist, as well. Photos of siblings and parents, if available, can be reviewed. Especially helpful to the artist are photos of the missing subject and a family member viewed from similar angles. These are helpful in determining how many renderings can be completed to give the viewing public a chance to connect with a facial angle they may have normally seen. This can make the difference in someone simply recognizing the subject and actually speaking up or phoning in a tip.

To depict a sign of ageing, most artists put down lines on the portrait across the person's forehead or under the eyes. Fagin suggests, "In a line rendering of the face, creases are best expressed as a turning, rather than as a crack in a smooth surface,"<sup>1</sup> to get a more accurate rendition in the appearance of ageing. Forensic artists often utilize this factor when attempting an age progression in a medium such as a pencil drawing.

### **The Signs of Ageing**

In my experience, most people go through common stages of ageing. According to Taister, Holliday, and Borrmann in their paper, *Comments on Facial Aging in Law Enforcement Investigation*,<sup>3</sup> ageing can be broken down into groups of 10 years -20s, 30s, 40s, etc. The paper gives what are more visible signs in each of those time frames, but it also states that, "Ageing is a highly individual phenomenon."<sup>3</sup>

According to Taister et al., several internal factors should be considered prior to attempting an age progression drawing case, including:

- Genes
- Diet over a period of time
- Allergic reactions
- Alcohol consumption
- Smoking
- Drugs

- Lack of rest
- Psychological trauma

Any combination of these and/or external factors could hasten the appearance of the ageing process and make a person look older. These external factors must be considered, as well. External ageing or de-ageing factors could be any combination of:

- Weather beaten, drying, chapping skin from the sun
  - Makeup, which can add or deduct age
  - Pliable theatrical features glued or masked in places that can alter an appearance
  - Additional add-ons such as beard, moustache, hairstyle, and eye glasses or colored contact lenses
- What ages one person might not necessarily age another. What are these ageing signs? In their paper, *Comparison of Synthetic Face Ageing to Age Progression* by Forensic Sketch Artist, Eric Patterson et al, states, "of these morphological changes varies. Soft tissue changes may not readily be apparent in the twenties and thirties but changes greatly escalate during the fifties and sixties."<sup>4</sup> Other ageing signs discussed by Patterson et al. include:
- Ear lobes that droop with gravitational pull and loss of tonality.
  - Nose bulb endings that droop with gravitational pull and loss of tonality, resulting in the ending tipping downward.
  - Skin that loses tautness, seen in very faint skin texturing that appears like crosshatching lines. The skin can become tougher looking or later in life, papery thin.
  - Blotchy patch colorations or translucence appears in the facial skin of extremely older persons. By age 80 to 90, often severe weight loss may occur and suddenly the skin appears to be pulled taut over bony structures and displays excess skin into deep folds under the chin, in neck area, or sunken in the eye cavities. Sometimes even a gaunt appearance is present; the skin becomes thinner and translucent showing colorations of bluish veins and opalescence or skinning of color occurs.
  - Lumpy and/or bumpy textures appear on the cheek, chin, forehead, and neck.
  - Mole development and heightened projections. What was once light becomes darker, and what was barely raised becomes more projected.
  - Paunchiness under and alongside the chin appears at approximately age 50.
  - Less sparkle in the eye and possibly a slightly opaque appearance from the development of cataracts.
  - Necklines and cords that appear in persons from 60-70 years and grow more visible in the following years.
  - Overall health and diseases that can cause skin and teeth discoloration.
  - Skin pores that can enlarge on a nose tip or varicose veins that can become predominant.
  - Hairlines recede and hair thins in both male and females.

### **Age Progression and Missing Persons Cases**

Many who go missing are from the 18-25 year age group. Here are numerous accounts of a young person suddenly leaving home or work and never returning. Perhaps they meet up with an unknown person and possibly fall prey as a victim. Sometimes a youth leaves home and gets wrapped up in new acquaintances, a different lifestyle, and hesitates about returning home for a variety of reasons.

In her book, *Forensic Facial Reconstruction*,<sup>5</sup> Dr. Caroline Wilkinson states that children's faces, in time will grow forward and downward through various stages of child growth development. Child growth development, in general, usually ceases around 16-18 years of age as adolescent facial features mature. She states, however, "At birth the face is a quarter of its adult size. During the first year the face will more than double in size, and throughout childhood the bones and cartilages develop and alter the proportions and shape of the face," and "Despite all these changes the individual's identity remains apparent." The forensic artist must take into consideration the development of the person in facial features from very young to current age in order to achieve an

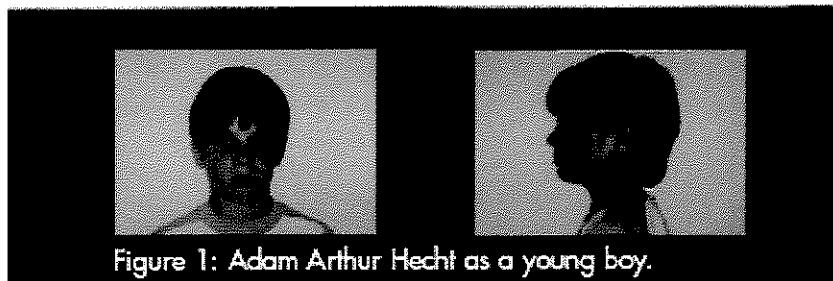
accurate picture.

If investigators proceed on the theory that a missing person is still alive, the question arises as to what would his or her appearance is today, thus an age progression drawing is often submitted by a forensic artist. Not given any specific information about the subject or family genes, certain signs of ageing are assumed. For example, the hairline has receded back to a level and a style typical of his age or the skin has lost tautness. Also, a non-descriptive type of clothing is put on subject in an age progression drawing to more or less lend an air of completeness to the portrait -to balance it, but not overwhelm or take the viewer's eyes anywhere other than into the face.

Let's take a look at two unsolved cases where age progression was used to refresh an image in hopes of solving the case.

**Case: Adam Arthur Hecht**

In the photograph shown in Figure 1, we see Adam Arthur Hecht as a young boy. In 1989 at the age of 23, Adam was reported missing from Beverly Hills, California. The flyer used by police at the time of his disappearance is shown in Figure 2. Adam is still missing.



## POLICE BULLETIN

### BEVERLY HILLS POLICE DEPARTMENT

Marvin D. Iannone, Chief of Police

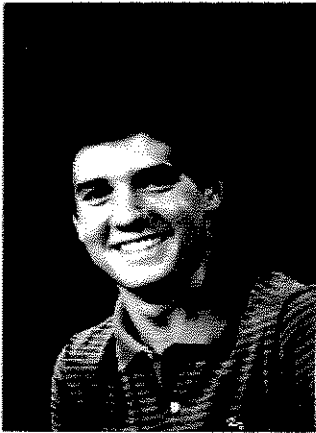
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July 12, 1989

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## MISSING PERSON

### INFORMATION WANTED



NAME: ADAM MICHAEL HECHT

HEIGHT: 5'11"

WEIGHT: 160 LBS.

HAIR: BLACK / NEARLY WITH A SCARF

EYES: BROWN

D.O.B.: 08-06-65

DATE MISSING: JUNE 7, 1989

TIME: 1100 HOURS

MISSING FROM: 1234 SO. BEDFORD DR.,  
BEVERLY HILLS, CA.

ADAM HECHT WAS LAST SEEN ON JUNE 7, 1989 AT HIS RESIDENCE IN BEVERLY HILLS. HE LEFT IN A DODGE CAR WHICH WAS RECOVERED, ABANDONED IN BEVERLY HILLS. TWO HOURS AFTER HE WAS SEEN HECHT WAS IN A WHITE VAN, CONTAINING MONEY, CREDIT CARDS AND HIS BROTHER'S GUNDOG, ONE OF THE CAR'S WHEELS HAD BEEN EXHAUSTED TO THE POINT OF FAILURE, AND WAS IN THE WHEELS AREA.

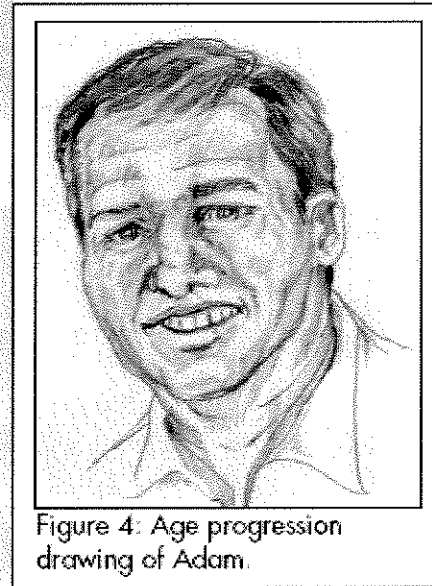
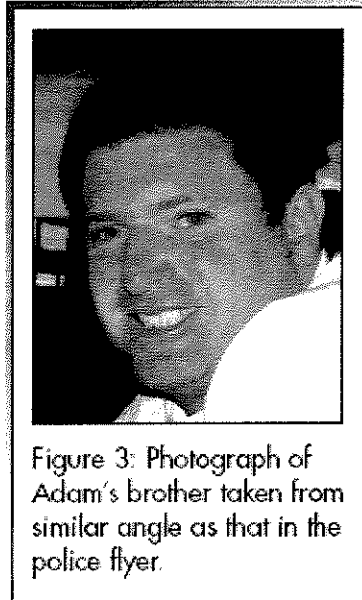
ANY PERSON HAVING INFORMATION REGARDING THE FULFILLMENT OF ADAM HECHT, OR KNOWLEDGE OF HIS WHEREABOUTS, PLEASE CONTACT DETECTIVE ELS JOELER, BEVERLY HILLS POLICE DEPARTMENT, BEVERLY HILLS, CALIFORNIA, (310) 285-1165.

**Figure 2: Police flyer used at time of Adam's disappearance.**

Twenty years have passed since Adam went missing, so an age progression needed to be executed in order to update his photo to reflect the present time. Updating is recommended approximately every 10 to 20 years to bring the missing person's face up to the current age and to keep him in the public's eye, hopefully bringing forward new information.

In doing the age progression for Adam, I was able to use a photograph of his brother, taken from a similar angle as that used in the police flyer (Figure 3). Family genes are very prevalent in both of the brothers' faces, as we see in the smiling expression and across the eyes. Family characteristics can also be seen in the forehead, cheekbone height, smile (showing teeth), eye and eyebrow spatial placement, and facial expression. Remember that family traits are often repeated in siblings, and the resemblance is strong in these photos.

My age progression drawing of Adam (Figure 4), shows what he would like today at approximately age 43.

**Case: 'Charles' Karoly John Horvath-Allan**

'Charles' Karoly John Horvath-Allan went missing at the age of 20. A British subject, he had been traveling in Canada in May 1989. Scheduled to meet his mother in Hong Kong, Karoly failed to show and was reported missing. He was last seen at Tiny Town Campsite, located in Flintstone Adventure Park, on Highway 97; his last communication came from the area of Kelowna, British Columbia, Canada. A picture of Karoly John Horvath-Allan from 1989 is shown in Figure 5.

An age progression drawing of Karoly (Figure 6) was done to show what he would look like today. I was able to 'age' him by receding the hairline a bit and giving him a hairstyle more indicative of today. I also dropped the nose tip slightly, and took what were slight depressions and turned them into faint lines - subtle ways to slightly age a person's face. Other strategies were used, as well, such as turning the corners of the mouth down, which depicts ageing due to loss of tone. These subtle manipulations can progress a person quite a bit; the more increase in ageing, the more dramatic the changes will become. Additionally, the black and white medium itself ages the face.

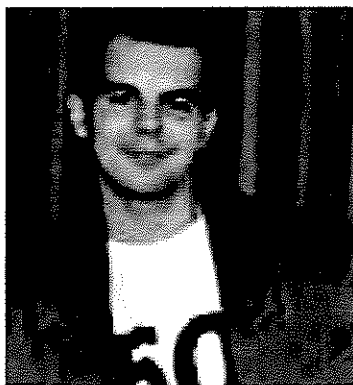


Figure 5: Photograph of Karoly John Horvath-Allan from 1989, the year he went missing.

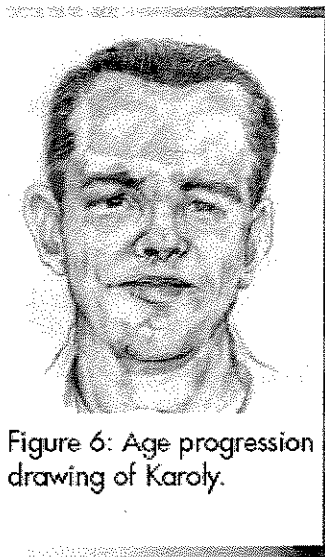


Figure 6: Age progression drawing of Karoly.

### Producing Age Progressions

In addition to forensic drawings, technology can also be used to produce age progressions. Computer photo enhancement and manipulation programs allow a trained person to alter a photograph by applying wrinkles, bags under eyes, shadows, and skin texture patterns created in ageing. Computer software programs can also use copy, cut, and paste functions to graft a patch of photographic skin texture from one person and incorporate it into the age progression image being created.

Artists, on the other hand, use shading or blending to make one feature dominant. Often these features involve hand-eye coordination to replicate and/or reproduce ageing details into an age progression drawing. Both hand drawings and computer-based methods are acceptable processes. Both require an artist's ability in hand-eye control and manipulative action.

### Conclusions

The hand that guides the computer program and the artist's hand must both be able to produce corrections or alterations with flawless detail in order to create an accurate age progression picture. No matter which method is used, the most accurate renditions use the anatomical knowledge of child growth development; and some medical knowledge of what to expect due to diseases, alcohol and drug abuse, or other serious illnesses.

There is some debate over whether computer-generated or artist generated age progression images are more accurate. An artist produces an image for the public to view and compare with a person already seen. It leaves a bit to the imagination to record and retain a similarity. Alternately, a computerized image, based upon a photograph and limited by the software used to create it, is viewed as an exact image, leaving no room for the mind to readjust that retained image. In other words, the age progression made by an artist allows the viewer to imagine who it could be, while a computer-generated age progression image leaves little room for those similarities which may evoke recognition in someone's mind.

### Editor's Note

*Both cases mentioned in this article are still open.*

*Any information on Adam Hecht's location should be directed to Detective Robert Hernandez at 310-285-2100, [rhernandez@beverlyhills.org](mailto:rhernandez@beverlyhills.org).*

*RCMP Constable Lisa Cullen of the Kelowna Detachment is the officer assigned to the 'Charles' Karoly John Horvath-Allan missing person case. Any information on Karoly's location should be*

directed to 250-470-6329, [Lisa.Cullen@rcmp-grc.gc.ca](mailto:Lisa.Cullen@rcmp-grc.gc.ca).

## References

1. Fagin, Gary, *The Artist's Complete Guide to Facial Expressions*, Watson- Gupatil Publication, New York, 1990, page 60. ISBN: 0-8230-1628-5.
2. Neave, R. Age changes to the face in adulthood. In: *Craniofacial Identification in Forensic Medicine*. J.G. Clement and D.L. Ranson, eds. Oxford Press, New York, 1998, Part 3 paper packet. 225-234.
3. Taister, M., Holliday, Sandra D., and Borrman, H.I.M. Comments on Facial Aging in Law Enforcement Investigation, *Forensic Science Communications*. (2000 April, Volume 2, Number 2), published by U.S. Justice Department, Federal Bureau of Investigation.
4. Patterson, E., Sethuram, A., Albert, M, Ricanek, K., "Comparison of Synthetic Face Ageing to Age Progression by Forensic Sketch Artist," (2007), p247-250. IASTED International Conference on Visualization, Imaging, and Image Processing, Spain, August 2007.
5. Dr. Caroline Wilkinson, *Forensic Facial Reconstruction*, Cambridge University Press, Cambridge, United Kingdom, 2004, page 6. ISBN: 0-521-82003-0.

## Other Resources

1. Martin P. Evison, "Modeling Age, Obesity, & Ethnicity in a Computerized 3-D Facial Reconstruction," (paper presented at 9th Biennial Meeting of International Association For Craniofacial Identification, FBI, Washington DC, July 2000, published in *Forensic Science Communications*, April 2001, Vol. 3, No. 2).
2. Heafner, H. Police Composite Art, Facial Reconstruction and Other Techniques, *Journal of Forensic Identification* (1966) 46:223-238.

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