

Strabismus and employment: the opinion of headhunters

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ABSTRACT.

Purpose: The aim of this study was to determine the influence of strabismus on an individual's ability to find employment based on the opinion of Swiss headhunters.

Methods: Forty Swiss headhunters retrieved from a Swiss online telephone directory were interviewed using a validated questionnaire in order to determine if strabismus would have an impact on a person's ability to find employment. Photographs of a strabismic man and woman as well as of other computer-generated facial anomalies could be downloaded from the Internet during the interview.

Results: 72.5% of headhunters judged that strabismic individuals would have more difficulties in finding a job than orthotropic persons. These difficulties were judged to be stronger in women than in men ($P = 0.006$), and in exotropic compared to esotropic persons ($P = 0.01$). Asked about seven facial anomalies, exotropia was found to have the third and esotropia the fourth (women) or fifth (men) most strongly negative impact on finding employment, after having strong acne and a visible missing tooth. Headhunters judged that persons with strabismus are significantly perceived as less attractive and less intelligent by potential employers.

Conclusion: Visible strabismus negatively influences individuals' ability to find a job and therefore has an impact on their economic status. Successful strabismus surgery realigns the visual axes, producing a normal facial appearance and therefore eliminating the negative impact of strabismus on employability.

Key words: employment – esotropia – exotropia – facial anomalies – headhunters – strabismus

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Introduction

Several studies have shown that strabismus is associated not only with functional deficits (Lennerstrand 2007) but also with psychosocial problems (Menon et al. 2002), a more negative self-image (Menon

et al. 2002), a lower quality of life (Satterfield et al. 1993; Jackson et al. 2006), and increased anxiety and depression (Burke et al. 1997; Beauchamp et al. 2005a). Some research showed that this negative impact of strabismus could be eliminated by successful strabismus

surgery (Burke et al. 1997; Beauchamp et al. 2005a).

Few studies analysed the influence of strabismus on employment, which can be considered one of the most important elements in a person's life. One study (Olitsky et al. 1999) evaluated the impact of strabismus on the perception of characteristics that are important for employment. Based on digitally altered photographs of a male individual being once orthotropic, once strongly esotropic and once strongly exotropic, the authors interviewed 212 college students asking them to evaluate personality characteristics that are important for social interaction and employment capability. Overall rating of the strabismic photographs was significantly lower compared to orthotropia. Esotropia had a negative influence on attentiveness, competency, emotional stability, intelligence, leadership ability, communication and organizational skills. Exotropia was associated with less sincerity.

One other study (Coats et al. 2000) measured the impact of strabismus on the ability to find a job based on similarly qualified job résumés including digitally altered photographs of two men and two women shown with normally aligned eyes, with a large angle esotropia and with a large angle exotropia. The authors interviewed 79 marketing managers and asked them to rank the applicants against each other in order of hiring preference. Strabismic women resulted in being

less likely to be hired, but no influence on hiring decisions was found for men.

A third study (Goff et al. 2006) analysed the chances of being promoted or experiencing job progression based on digitally altered photographs of seven male and seven female officers of the US Army. The photographs were rated on a 1–10 Likert scale by 38 raters composed of military officers from several military specialties. The authors found lower ratings for the esotropic compared to the orthotropic group and showed that strabismus can also affect the ability to be promoted or experience job progression.

In a pilot study (Mojon-Azzi & Mojon 2007), we interviewed by phone 20 Swiss headhunters and found that visible strabismus has a negative impact on the overall judgment of a potential employer and that it negatively influences the ability to obtain a job. Based on the results of the pilot study, we refined the questionnaire, analysed exotropia and esotropia separately, interviewed a larger sample of headhunters and loaded photographs of digitally altered faces onto the Internet that could be downloaded by the headhunter during the interview. To the best of our knowledge, this is the only study on strabismus and employment comparing photographs of strabismic individuals to other facial alterations and the only study about employment and strabismus in Europe.

Materials and Methods

Using the Swiss online telephone directory <http://www.tel.search.ch>, 361 addresses of Swiss headhunters were retrieved in December 2005. Out of them, 20 were excluded because they participated in the pilot study (Mojon-Azzi & Mojon 2007), 77 were randomly selected and 40 (52%) could be interviewed. Twenty-seven headhunters could not be reached or had no time; 10 did not have access to the Internet and were therefore excluded. The remaining 40 headhunters were interviewed by telephone by the same interviewer between January 2006 and March 2007 using a questionnaire that was validated previously in Switzerland by interviewing 10 non-medical individuals. A similar questionnaire was already used in the pilot study

(Mojon-Azzi & Mojon 2007) with 20 headhunters and in a study on the opinion of dating agents about the perception of strabismic persons by potential partners (Mojon-Azzi et al. 2008). Changes from the questionnaire used in the pilot study were mainly the result of suggestions from the interviewers and the interviewed headhunters during the pilot study. One of the main problems of the pilot study was that some of the interviewed headhunters had difficulties imagining strabismic persons or persons with other facial anomalies. That's why in this study, we loaded digitally altered photographs of a frontal face and shoulder photograph of a woman and of a man on the Internet and interviewed only headhunters with Internet access. All digital alterations were performed with Adobe Photoshop 6.0 by using the techniques of merging, erasing or distortion. The squint angles corresponded to 50 prism diopters. These squint angles were chosen to allow a better comparison between studies because the majority of previous studies used that angle (Olitsky et al. 1999; Coats et al. 2000; Mojon-Azzi & Mojon 2007; Mojon-Azzi et al. 2008).

In a telephone interview, each headhunter was asked how often he thinks photographs are required for job applications, if strabismic subjects have more difficulties in finding a job (in general, not only through headhunters), and if these difficulties are influenced by the gender of the job applicant or the type of strabismus (we showed photographs of a left esotropic and left exotropic man and woman simultaneously) (Fig. 1, numbers 2 and 3 and numbers 10 and 11). Based on their importance for a job application, the headhunters then graded 11 personality traits (reliability, honesty, attractiveness, likeability, intelligence, interesting personality, company loyalty, optimism, friendliness, open-mindedness and sincerity), based on their importance for potential employers, with weights ranging from 1 (completely unimportant) to 10 (extremely important). They were then asked if strabismus has a negative, a positive or no influence on the perception of the 11 personality traits by a potential employer. The total influence of strabismus for each trait was calculated by multiplying the

weight by -1 if the influence of strabismus was judged to be negative, by 0 if the headhunter stated that strabismus has no influence on employability, or by 1 in case of a positive influence. The selection of personality traits was mainly based on previous literature (Burke et al. 1997; Olitsky et al. 1999; Mojon-Azzi & Mojon 2007; Mojon-Azzi et al. 2008) and on the experience of the interviewers during the pilot study. Finally, the headhunters were asked to rank the negative influence of both forms of strabismus as well as of five other facial anomalies on the ability to find employment, where the first rank had the strongest negative impact. For the ranking, the following photographs of a man were shown simultaneously: normal appearance, left esotropia, left exotropia, facial scar, protruding ears, big nose, acne and visible missing tooth (Fig. 1, numbers 1–8) followed by the photographs of a woman (Fig. 1, numbers 9–16).

Statistical analyses were performed with R (version 2.1.0, <http://cran.r-project.org/>). Confidence intervals were calculated with the chi-squared or with the two-tailed *t*-test. The chi-squared test was used for results with only two categories (e.g. yes/no), the *t*-test if a third, neutral possibility was included [e.g. more (1), same (0), less (-1)] because the chi-squared test would not have permitted the inclusion of the neutral category in the analysis. Results were considered significant if $P < 0.05$. Holm's correction was applied to correct for multiple testing. Although it would have been interesting to study the interactions between the different personality traits, this would have required a higher number of interviewed headhunters. We certify that all applicable institutional and governmental regulations concerning the ethical use of human volunteers were followed during this research.

Results

Forty (13 women and 27 men) Swiss headhunters (mean age 40.13 years, range 22–73) participated in the telephone interview. They estimated that a photograph is included in 53.8% [95% confidence interval (CI) 45.62–62.04] of all job applications in Switzerland. 72.5% (29 headhunters)



Fig. 1. Photographs of a man and a woman without and with seven computer-generated facial anomalies.

Table 1. Weighted personality traits and their perception in persons with strabismus by potential employers.

Personality trait	Weight* mean (CI)	Perception† mean (CI)	Weighted average score = weight × perception mean (CI)	P-value of weighted average score
Reliability	8.58 (8.14–9.01)	-0.15 (-0.30 to 0.00)	-1.23 (-2.59 to 0.14)	0.08
Honesty	8.98 (8.46–9.49)	0.10 (-0.04 to 0.24)	0.65 (-0.51 to 1.81)	0.26
Attractiveness	5.91 (5.28–6.55)	-0.78 (-0.91 to -0.64)	-4.79 (-5.75 to -3.83)	1.9e-12‡
Likeability	7.40 (6.90–7.90)	-0.15 (-0.30 to 0.00)	-1.33 (-2.44 to -0.21)	0.02
Intelligence	7.70 (7.24–8.12)	-0.23 (-0.36 to -0.09)	-1.50 (-2.43 to -0.57)	0.002‡
Interesting personality	6.63 (5.98–7.27)	-0.15 (-0.36 to 0.06)	-1.03 (-2.52 to 0.47)	0.17
Company loyalty	7.32 (6.66–7.96)	0.10 (-0.02 to 0.22)	0.84 (-0.09 to 1.76)	0.08
Optimism	7.85 (7.39–8.31)	0.00 (-0.15 to 0.15)	-0.05 (-1.18 to 1.08)	0.91
Friendliness	8.56 (8.12–9.00)	0.13 (-0.02 to 0.27)	1.06 (-0.28 to 2.40)	0.12
Open-mindedness	7.71 (7.25–8.17)	-0.03 (-0.22 to 0.17)	-0.25 (-1.81 to 1.31)	0.75
Sincerity	8.44 (7.99–8.88)	0.08 (-0.06 to 0.21)	0.45 (-0.69 to 1.59)	0.43
Total		-0.10 (-0.15 to -0.05)	-7.16 (-14.15 to -0.17)	0.05

CI, 95% confidence interval.

* Scale ranging from 1 (completely unimportant) to 10 (extremely important).

† Influence of strabismus: negative (-1), positive (+1), non-existent (0).

‡ Remains significant after Holm’s correction for multiple comparisons.

believed that strabismic individuals had more difficulties in finding employment, 25.0% (10 headhunters) believed that they didn’t have more difficulties and one headhunter had no opinion on this subject (chi-squared test, $P = 0.002$). Out of the 29 headhunters believing that strabismus influenced the chances of finding employment negatively, 24.1% (seven) estimated that women had more difficulties, 72.5% (21) that both had the same level of difficulties and 3.4% (one) were uncertain; 37.9% (11) believed the impact of exotropia to be stronger, 6.9% (two) believed the impact of esotropia to be stronger, 48.3% (14) thought that they had the same impact and 6.9% (two) did not know. Therefore, the negative impact of strabismus on employment is stronger in women than in men (t -test, $P = 0.006$) and in exotropic compared to esotropic persons (t -test, $P = 0.01$). Out of the headhunters believing that strabismus had a nega-

tive influence on employment, 72.4% (21) believed that this negative influence was higher in positions with client contact and 17.2% (five) believed that this was the case in jobs with representative functions. Headhunters stressed that in general the appearance and smell of a person strongly influence the perception of this person by a potential employer.

Table 1 shows the weight and the opinion of the headhunters concerning the influence of strabismus on the perception of the selected personality traits by a potential employer. The average scores for each personality trait show that strabismic individuals are perceived as significantly less attractive ($P = 1.9e-12$) and less intelligent ($P = 0.002$).

The ranking for seven facial anomalies (Table 2) confirmed that exotropia was perceived as worse than esotropia. Compared to seven other facial anomalies, having a visible missing tooth as well as having strong acne were

judged to have a significantly stronger negative influence on the ability to find employment than large exotropia and esotropia. In men and women, a very large nose and a visible facial scar had a significantly weaker influence than strabismus on the ability to find employment.

Discussion

The interview of 40 Swiss headhunters using a validated questionnaire showed that both esotropia and exotropia have a negative impact on the ability of a person to find employment. These results differ from those of other studies (Olitsky et al. 1999; Goff et al. 2006) in that exotropia was perceived as having a stronger negative impact than esotropia. Headhunters judged that persons with strabismus are perceived as being less attractive and less intelligent by a potential employer. These results are similar to those of the pilot study (Mojon-Azzi & Mojon 2007) and partly similar to those of a study on the opinion of Swiss dating agents on the perception of strabismic individuals by potential partners. Dating agents think that potential partners perceive strabismic persons not only as less attractive and intelligent, but also as less erotic, likeable, interesting, successful and sporty (Mojon-Azzi et al. 2008). It therefore seems that strabismus has a stronger influence on the perception of potential partners than on that of potential employers. In their study, Olitsky et al. (1999) also found that esotropic individuals were

Table 2. Rank of the impact of seven facial anomalies on the ability to find employment [from 1 (strongest impact) to 7 (least strong impact)] in the opinion of headhunters.

Facial anomaly	Men: mean rank (CI)	Women: mean rank (CI)
Strong acne	1.68 (1.30–2.05)*†	1.85 (1.50–2.20)*†
Visible missing tooth	2.45 (1.95–2.96)*†	1.88 (1.55–2.20)*†
Large exotropia	4.30 (4.00–4.61)†	4.11 (3.77–4.45)†
Strongly protruding ears	4.35 (3.99–4.72)†	5.25 (4.92–5.59)*†
Large esotropia	5.02 (4.77–5.29)*	4.71 (4.44–4.99)*
Large facial scar	5.31 (4.97–5.65)*	5.13 (4.84–5.42)*†
Very large nose	5.51 (5.22–5.81)*†	5.52 (5.24–5.81)*†

CI, 95% confidence interval.

* Differs significantly from exotropia after Holm’s correction.

† Differs significantly from esotropia after Holm’s correction.

perceived as being less intelligent, but esotropia additionally influenced the perception of other personality traits such as attentiveness, competency and emotional stability. In contrast, exotropia was only associated with less sincerity. The ranking of seven facial disfigurements showed that both forms of strabismus have a larger negative influence on the perception of a potential employer than a very large nose, a visible facial scar and (for women) strongly protruding ears. Strongly protruding ears are considered to have a larger impact in men than in women because men cannot hide their ears behind their hair. Possibly, the ranking of the facial anomalies in general also reflects the ease of hiding or altering them. Having a visible missing tooth and visible acne were judged to have a stronger impact than exotropia and esotropia. These results correspond to those of our study on the impact of strabismus on potential partners (Mojon-Azzi et al. 2008). The impact of strabismus on employability compared to that of six other facial anomalies was considered less strong in this study, where the headhunters could see digitally altered pictures, than in the pilot study (Mojon-Azzi & Mojon 2007), where the headhunters could only imagine the look of persons with the analysed anomalies.

This study has some limitations. Because the interviews have been performed in Switzerland, the results may not be valid for other countries. Furthermore, our results reflect the opinion of headhunters and, although they may be considered experts in the field of employment, their opinion might not reflect employability through other channels. Finally, because many different facial anomalies were shown to the headhunters, it was not possible to include a comparison of different severities of strabismus or other facial anomalies as well as a larger selection of personality traits. The accumulated effect of strabismus might therefore have been different if other traits had been chosen.

The results of our study show that strabismic persons have more difficulties in finding employment than orthotropic persons and therefore that strabismus has an impact on individuals' economic status and probably on their well-being and self-esteem. Successful strabismus surgery realigns the

visual axes, producing a normal facial appearance and therefore eliminating the negative impact of strabismus (Burke et al. 1997; Beauchamp et al. 2005a). It also restores a formal or normal condition (Baker 2002), is highly cost-effective (Beauchamp et al. 2006), has low risks and has good surgical outcomes including significant improvements in central and peripheral binocular visual function (Beauchamp et al. 2003, 2005a, 2005b). Despite that, strabismus surgery is often considered to be only cosmetic and is not always covered by health insurance and managed care providers (Rosenbaum 1999).

Based on the opinion of Swiss headhunters, we conclude that in Switzerland strabismic persons are perceived less favourably by a potential employer, and therefore have more difficulties in finding a job. This negative impact of strabismus on the ability to find employment is stronger in exotropic than in esotropic individuals and is larger than that of a visible scar or a very large nose, but is not as strong as that of a missing tooth or strong acne.

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Authorship

Stefania Mojon-Azzi participated in the conception and design, data analysis and interpretation of data. She drafted the manuscript and critically revised it, and participated in performing the statistical analysis.

Daniel Mojon participated in the conception and design, data analysis and interpretation of data. He critically revised the manuscript, and participated in performing the statistical analysis.

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