


A dissociation in judgements of confidence in people with dandruff based on self-reports compared to reports from other observers

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Abstract

OBJECTIVE: It is not clear how well evaluations made by other people correspond with self-evaluations of esteem or confidence. To address this question, we compared measurements of confidence in participants with and without dandruff.

METHODS: Participants with dandruff were significantly different from healthy control participants on a quality of life measure of scalp dermatitis, but not on self-evaluations of esteem or confidence. To determine whether there were differences in the evaluation of confidence by others, both groups of participants were videoed while they prepared for or gave a presentation in an interview scenario.

RESULTS: Raters, who were unfamiliar with the identities of the participants, evaluated confidence from the muted videos. In contrast to their self-evaluations, male participants with dandruff were rated as having lower confidence compared to participants who reported a healthy scalp.

CONCLUSIONS: These findings reveal a difference between explicit and implicit measures of self-esteem in men compared to women with dandruff.

Résumé

OBJECTIF: il n'est pas clair dans quelle mesure les évaluations effectuées par d'autres personnes correspondent à des autoévaluations d'estime ou de confiance. Pour répondre à cette question, nous avons comparé les mesures de confiance chez les participants avec et sans pellicules.

MÉTHODES: les participants avec des pellicules ont des résultats significativement différents par rapport aux témoins sans pellicules en ce qui concerne la mesure de la qualité de vie avec dermatite du cuir chevelu, mais pas sur les autoévaluations d'estime ou de confiance. Pour déterminer s'il existait des différences entre l'autoévaluation et l'évaluation de la confiance par d'autres, les deux groupes de participants ont été filmés pendant leur préparation pour un scénario d'entretien ou lors de leur présentation.

RÉSULTATS: Les évaluateurs, qui ne connaissaient pas l'identité des participants, ont évalué la confiance en regardant les vidéos sans le son. Contrairement à leurs autoévaluations, les participants

masculins avec pellicules ont été classés comme ayant moins confiance que les participants qui ont signalé un cuir chevelu sain.

CONCLUSIONS: Ces résultats révèlent une différence entre les mesures explicites et implicites de l'estime de soi chez les hommes par rapport aux femmes atteints de pellicules.

Introduction

Self-esteem is an important component of the self-concept. It reflects how worthwhile or confident an individual feels about themselves [4,10]. There are many benefits to having a positive view of the self. For example, people with high self-esteem are presumed to be psychologically happy and healthy [7,31], whereas those with low self-esteem are believed, by others, to be psychologically distressed and perhaps even depressed [32]. Indeed, it has been argued that most people are highly motivated to maintain or enhance their self-esteem [4].

A number of theories suggest that self-esteem reflects the way that individuals perceive themselves with respect to others [9,10,21,26]. According to this perspective, levels of self-esteem will vary according to how well a person feels valued, accepted and liked by other people. The sociometer theory proposed by Leary and colleagues suggests that this fundamental need to belong is based on our evolutionary history [5,20]. According to this theory, self-esteem functions as a monitor of the likelihood of social exclusion. Thus, self-esteem serves as an indicator of social acceptance–rejection by other people.

Despite the fact that self-esteem is thought to reflect the degree to which individuals feel accepted and liked by others, most measures of self-esteem involve self-evaluation. Explicit measures of self-esteem typically involve the completion of a questionnaire in which participants are asked to provide a rating for multiple items on a test [14,25,10,12,16,19]. It has also been shown that single-item tests provide a good indication of performance outcomes on multiple-item tests [24]. However, the validity of explicit measures has come under challenge, because these measures rely on the accuracy of self-reports and may therefore be subject to bias. To address this issue, a number of studies have used implicit measures of self-esteem such as the Implicit Association Test (IAT), [13]. Interestingly, implicit and explicit measures of self-esteem are not always related (e.g. [6,18,19,28]). This dissociation between implicit and explicit measures of self-esteem is more evident in men than women [23]. This finding has been argued

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to reflect a greater intuition to trust feelings about themselves in women.

The aim of this study was to investigate whether self-evaluations of esteem correspond to evaluations made by others. Previous studies have shown observers make consistent and reliable judgements about personality traits based on brief meetings or watching short videos of people that they have not previously met [1–3,33]. Importantly, these short ('thin-slice'), zero-acquaintance evaluations can also be good predictors of performance. That is, in addition to being consistent across observers, these first impressions can also sometimes be accurate. For example, in a classic study by Ambady and Rosenthal [3], observers were shown muted videos showing an extract of the performance of teachers in a classroom. Observers' impressions of the teachers' personality (e.g. confidence, dominance) were both highly consistent and also significantly correlated with subsequent student evaluations of the teachers' effectiveness.

To manipulate levels of self-esteem, we recruited participants who had self-reported having dandruff and a control group of participants who reported having a healthy scalp. Dandruff prevalence is high, affecting approximately 50% of the population at some time in their life [11,35]. Clinical studies have found that the occurrence of skin conditions such as dandruff negatively impacts individuals' quality of life [27]. In Experiment 1, participants with dandruff and with healthy scalps completed self-evaluations of esteem and confidence. Next, these participants were filmed preparing for an interview presentation and giving a presentation in an interview. In Experiment 2 and Experiment 3, the muted videos from these different scenarios were evaluated on confidence by a different set of zero-acquaintance raters. Our hypothesis was that participants with dandruff would report lower confidence and self-esteem compared to participants with a healthy scalp. Moreover, this difference would be reflected in differences in non-verbal body language. Finally, we predicted that the correspondence between self and other evaluations of confidence would be closer in female compared to male participants.

Methods

Experiment 1

Participants

A total of 109 participants (29 male dandruff; 23 male healthy scalp; 28 female dandruff; 29 female healthy scalp) aged 18–30 were recruited in Nanjing, China, and gave their full informed consent to procedures which were screened by the Independent Ethics Committee of the Shanghai Clinical Research Centre (SCRC) which abided by the Declaration of Helsinki. Participants were given a small gift token in remuneration. Participants were divided into dandruff or healthy scalp groups based on the self-report of their scalp condition. A clinical scalp assessment was performed on each person to measure the amount/severity of dandruff in the dandruff group and to check that the healthy participants fitted a healthy criteria. The average head score value for dandruff (mean + SEM: 10.9 ± 0.87) was significantly higher than for healthy (mean + SEM: $7.0 + 0.37$) participants ($t(107) = 3.02$, $P < 0.005$, $d = 0.79$). To be included, participants also had to demonstrate a given level of personal hair care; they needed to use shampoo when washing their hair, plus at least two other personal care products a week, have had their hair cut in the last 2 months and have purchased at least one article of

clothing in the last month. Participants were also excluded if they had facial hair, visible facial tattoos or facial piercings (for methodological reasons, so the photographs would be comparable). Participants were within normal BMI range. Participants were instructed to refrain from washing their hair on the day of the appointment and to have missed their prior hair washing event. The intervention was contrived to elevate dandruff concerns in those with a dandruff condition.

Self-evaluation procedure

Participants completed a number of self-evaluations of self-confidence, self-esteem and general mood (as a control). Participants were asked to complete questionnaires in accordance with how they felt that particular day or in the moment. First, they rated their confidence (from 1 to 7, not at all confident to extremely confident) and how confident they thought others would perceive them (from 1 to 7, not at all confident to extremely confident). They also rated their overall attractiveness (from 1 to 7, not at all attractive to extremely attractive). Participants completed the Scalp-Dex questionnaire, which contains 23 questions designed to measure perceived quality of life with dandruff [8]. It has three subscales: symptoms (itchiness, flakiness etc.), functioning (how much the dandruff is perceived to affect everyday life) and emotions (how stressful or unpleasant the dandruff is perceived to be). The responses to the items were 'never', 'rarely', 'sometimes', 'often' and 'all the time'. All reported scores were converted from the 1 to 5 scale. Scores were averaged at the participant level to generate an overall dandruff score, with higher values reflecting greater effects of dandruff. Next, participants completed the expanded PANAS-X mood questionnaire [36], in which they rated the extent to which they have experienced positive or negative emotions (from 1 to 5, very slightly or not at all to extremely). Scores are summed across the 10 general negative affect items and across the 10 general positive affect items separately, to generate two scales, with higher scores reflecting greater positive or negative emotionality. Finally, participants completed the State Self-Esteem Scale [14]. This includes 20 items that measures a participant's self-esteem at a given point in time (from 1 to 5, not at all agree to extremely agree). Scales are averaged (after reverse scoring negative items) at the participant level to generate an overall self-esteem score, with higher values reflecting greater self-esteem.

Photograph and video procedure

A photograph was taken of each participant under standardized conditions, so that the participant was facing forward into the camera, at the same distance, and asked to keep a neutral expression. Participants were then instructed to imagine they were going to an interview and were asked to prepare a 30-s answer for the question 'Describe an achievement you are proud of'. Participants were given up to 30 s to compose their answer and filmed during this time (referred to as 'interview preparation' video). Interview preparation videos were used in Experiment 2. Participants indicated when they were ready to speak into the camera. A further 30-s recording was made for use in Experiment 3, referred to as the 'interview' video. For each 30-s recording, a 10-s clip was extracted at 10 s after the instruction was given. Participants wore a black T-shirt for photographs and videos. These were screened to ensure that no dandruff was actually visible, ensuring participant ratings would not be based simply on the appearance of dandruff.

Experiment 2

Participants

Thirty (16 female) participants aged 18–30 were recruited in Nanjing, China, and gave their full informed consent to procedures which were screened by the Independent Ethics Committee of the Shanghai Clinical Research Centre (SCRC) which abides by the Declaration of Helsinki. Participants were given a small gift token in remuneration. Participants were unfamiliar with the identities of the participants from Experiment 1.

Procedure

Participants rated the photographs and ‘interview preparation’ videos from participants in Experiment 1. Videos were muted. Participants first rated each target photograph on their attractiveness (from –100 to 100, very unattractive to very attractive). They then viewed the target interview video clips and rated them on confidence of the person (from –100 to 100, not at all confident to very confident).

Experiment 3

Participants

A further 32 (16 female) participants aged 18–30 were recruited in Nanjing, China, and gave their full informed consent to procedures which were screened by the Independent Ethics Committee of the Shanghai Clinical Research Centre (SCRC) which abided by the Declaration of Helsinki. Participants were given a small gift token in remuneration. Participants were unfamiliar with the identities of the participants from Experiment 1.

Procedure

Participants in Experiment 3 rated the photographs and the ‘interview’ videos from Experiment 1. Videos were muted. Participants first rated each target photograph on their attractiveness (from –100 to 100, very unattractive to very attractive). They then viewed the target interview video clips and rated them on confidence of the person (from –100 to 100, not at all confident to very confident).

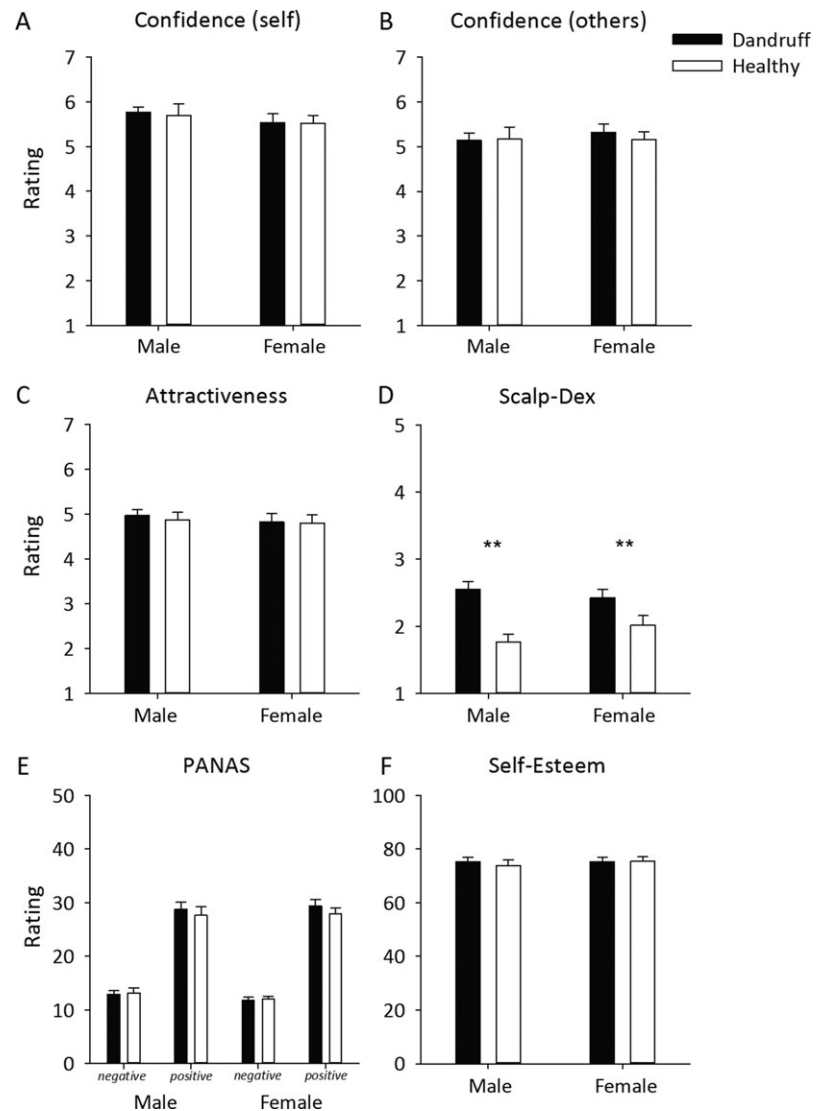


Figure 1 Experiment 1: Self-ratings of (A) self-confidence (B) confidence as others may perceive it (C) overall attractiveness, (D) Scalp-Dex score, (E) PANAS (negative and positive dimensions) and (F) State Self-Esteem in participants with dandruff or healthy scalps. The only effect of dandruff was evident on the Scalp-Dex questionnaire. Errors represent 1 SEM. Differences between dandruff and healthy participants are shown by **, $P < 0.01$.

Results

Experiment 1

Self-perceived confidence and attractiveness

Figure 1 shows the average scores for reports of (A) self-confidence, (B) self-confidence as perceived by others, (C) attractiveness, independently for male and female participants. A two-way ANOVA with gender (male, female) and dandruff (dandruff, healthy) was performed for each evaluation. There was no effect of gender or dandruff for any of these measures (all $P > 0.23$, all $\eta_p^2 < 0.014$).

Scalp-Dex

Figure 1D shows the average scores for the Scalp-Dex test for male and female participants. Scores were averaged across the 23 questions in the Scalp-Dex at the participant level so that a higher score reflects a greater negative impact from self-perceived dandruff (following procedures outlined by Chen et al. [8]). A two-way ANOVA showed a significant main effect of dandruff condition: $F(1,105) = 45.66, P < 0.001, \eta_p^2 = 0.303$. The self-perceived dandruff group scored higher than the self-perceived healthy group on the Scalp-Dex in general (mean dandruff group = 2.49, mean healthy group = 1.70, SEM difference = 0.12). The dandruff group were also significantly higher on all three individual subscales than the healthy group (all $P < 0.001$, all $\eta_p^2 > 0.240$). There was no effect of gender or any interaction between dandruff and gender (both $P > 0.25$). This shows that the presence of dandruff had a negative effect on this quality of life measure.

PANAS

Figure 1E shows the average scores for negative and positive affect on the PANAS questionnaire for male and female participants. The PANAS was scored by summing across the ten general positive and negative affect items separately, so that a higher score on each of these scales reflects higher positive or negative affect (following standard procedures outlined by Watson & Clark [36]). A two-way ANOVA on the negative affect scores showed no significant main

effect of dandruff: $(F(1,105) = 0.19, P = 0.66, \eta_p^2 = 0.002)$, no significant main effect of gender $(F(1,105) = 2.86, P = 0.09, \eta_p^2 = 0.027)$ and no interaction between dandruff and gender $(F(1,105) = 0.01, P = 0.94, \eta_p^2 < 0.001)$. A two-way ANOVA on the positive affect scores also showed no significant main effect of dandruff: $(F(1,105) = 1.56, P = 0.21, \eta_p^2 = 0.015)$, no effect of gender $(F(1,105) = 0.13, P = 0.73, \eta_p^2 = 0.001)$ and no interaction between dandruff and gender $(F(1,105) = 0.02, P = 0.90, \eta_p^2 < 0.001)$.

State self-esteem scale

Figure 1F shows the average scores on the State Self-Esteem Scale for male and female participants. Self-esteem scores were calculated by averaging across the 20 items on the State Self-Esteem scale (after reverse scoring negative items), so that a higher score reflects greater self-esteem (following standard procedures in Heatherton and Polivy [14]). A two-way ANOVA showed no main effect of gender $(F(1,105) = 0.27, P = 0.61, \eta_p^2 = 0.003)$ or dandruff $(F(1,105) = 0.12, P = 0.73, \eta_p^2 = 0.001)$ and there was no interaction $(F(1,105) = 0.22, P = 0.64, \eta_p^2 = 0.002)$.

Correlations between different measures of self-esteem

Table 1 shows the correlations between different measures across male or female participants. Interestingly, these results show that the different measures were more correlated in female compared to male participants. For example, self-evaluations of confidence were correlated with self-evaluations of how others perceive their confidence, in female but not male participants. Measures of self-confidence were also correlated with the State Self-Esteem Scale and inversely correlated with the Scalp-Dex index in the female but not male group. However, in both the male and female groups, self-confidence ratings were predicted by self-perceived attractiveness.

Experiment 2

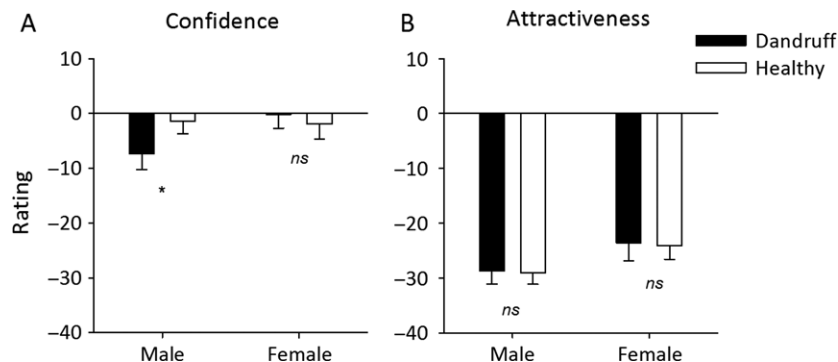
Other perceived confidence ratings

In this experiment, independent raters evaluated the confidence of the videos in which participants from Experiment 1 were preparing for an interview. Figure 2A shows average ratings for confidence on videos

Table 1 Correlations between different measures of self-perception in Experiment 1. Significant correlations (indicated in bold, $P < 0.05$) were evident between different measures of self-esteem in the female compared to the male group

	Confidence (self)	Confidence (others)	Attractiveness	Scalp-Dex	PANAS (negative)	PANAS (positive)	Self-Esteem
Male							
Confidence (self)	–						
Confidence (others)	0.27	–					
Attractiveness	0.44	0.17	–				
Scalp-Dex	–0.02	–0.05	0.13	–			
PANAS (neg)	–0.23	–0.22	0.08	0.21	–		
PANAS (pos)	0.29	0.00	0.19	0.26	0.27	–	
Self-Esteem	0.26	0.07	0.20	–0.01	–0.50	0.00	–
Female							
Confidence (self)	–						
Confidence (others)	0.44	–					
Attractiveness	0.50	0.47	–				
Scalp-Dex	–0.10	–0.03	0.16	–			
PANAS (negative)	–0.06	0.05	–0.13	0.13	–		
PANAS (positive)	0.28	0.16	0.10	0.12	0.23	–	
Self-Esteem	0.53	0.38	0.55	–0.42	–0.34	0.10	–

Figure 2 Experiment 2: Average ratings of confidence and attractiveness of muted videos showing targets with dandruff or with healthy scalps preparing for an interview. Raters were unfamiliar with identity of the targets. There was a significant effect of dandruff on the confidence ratings of male but not female targets. In contrast, there was no effect of dandruff on ratings of attractiveness from a photograph. Errors show 1 SEM. *, $P < 0.05$; ns, not significant.



of male and female targets with and without dandruff. A two-way ANOVA was performed to investigate the effect of gender and dandruff. There was a significant interaction between gender and dandruff: $F(1,29) = 5.14$, $P = 0.031$, $\eta_p^2 = 0.151$. Videos of males with dandruff were rated as less confident than healthy male targets (mean dandruff male = -7.38 , mean healthy male = -1.38 , SEM difference = 2.29 , $t(29) = -2.63$, $P < 0.05$, $d = 0.34$). In contrast, there was no significant difference between confidence ratings for videos of female targets with dandruff compared to healthy female targets (mean dandruff female = -0.19 , mean healthy female = -2.00 , SEM difference = 1.85 , $t(29) = 0.98$, $P = 0.335$, $d = 0.10$).

Other perceived attractiveness ratings

To determine whether differences in confidence between different groups might be based on the physical appearance of the person in the video, participants also rated a photograph of each target on attractiveness. Figure 2B shows average ratings of attractiveness for photographs of male and female targets. A two-way ANOVA was performed to look for the effect of gender and dandruff on attractiveness. In contrast to the ratings of confidence, there was no main effect of dandruff or any interaction between dandruff and gender. There was only a main effect of target gender: $F(1,29) = 4.76$, $P = 0.037$, $\eta_p^2 = 0.141$. Female faces were rated as more attractive than male faces on average (mean female face = -25.15 , mean male face = -27.50 , SEM difference = 1.08).

Experiment 3

Other perceived confidence ratings

In this experiment, a separate group of participants rated the confidence of videos of dandruff and healthy individuals giving an

interview. Figure 3A shows average ratings of confidence for videos of males and females with and without dandruff. A two-way ANOVA was performed to investigate the effect of gender and dandruff on perceived confidence ratings. There was a significant interaction between gender and dandruff: $F(1,31) = 17.13$, $P < 0.001$, $\eta_p^2 = 0.356$. This reflected the finding that videos of male targets with dandruff were rated as less confident than healthy male targets (mean dandruff male = -5.32 , mean healthy male = 1.38 , SEM difference = 2.42 , $t(31) = -2.78$, $P < 0.01$, $d = 0.31$). Interestingly, videos of female targets with dandruff were rated as more confident than healthy female targets (mean dandruff female = 6.63 , mean healthy female = 0.88 , SEM difference = 1.52 , $t(31) = 3.77$, $P < 0.001$, $d = 0.27$).

Other perceived attractiveness ratings

Again to rule out the possibility that differences in confidence between different groups might be based simply on the physical appearance of the person in the video, participants also rated a photograph on attractiveness. Figure 3B shows average ratings of attractiveness for photographs of male and female targets. A two-way ANOVA was performed to look for the effect of gender and dandruff. In contrast to ratings of confidence, there was no main effect of dandruff or any interaction between dandruff and gender. There was only a main effect of target gender: $F(1,31) = 15.82$, $P < 0.001$, $\eta_p^2 = 0.338$. Female faces were rated as more attractive than male faces on average (mean female face = -20.54 , mean male face = -32.20 , SEM difference = 11.66).

Reliability of measures

A similar pattern of results was found for judgements of confidence and attractiveness by others in experiments 2 and 3. To measure

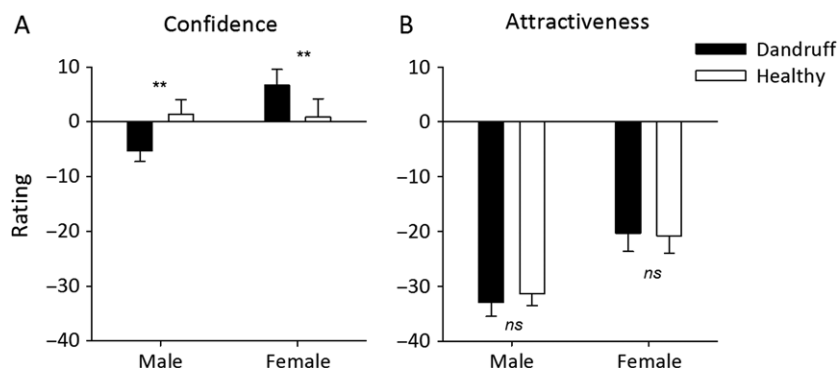


Figure 3 Experiment 3: Average ratings of confidence and attractiveness of muted videos showing targets with dandruff or with healthy scalps giving a presentation during an interview. Raters were unfamiliar with identity of the targets. There was a significant difference in the effect of dandruff on the confidence ratings of male and female targets. In contrast, there was no effect of dandruff on ratings of attractiveness from a photograph. Errors show 1 SEM. **, $P < 0.01$; ns, not significant.

Table 2 Correlations between different measures of confidence and attractiveness from experiments 1–3 in male and female groups. Significant correlations are indicated in bold ($P < 0.05$)

	Confidence			Attractiveness		
	Expt 1 (self)	Expt 2 (other)	Expt 3 (other)	Expt 1 (self)	Expt 2 (other)	Expt 3 (other)
Male						
Confidence (Expt 1, self)	–					
Confidence (Expt 2, other)	–0.07	–				
Confidence (Expt 3, other)	0.02	0.48	–			
Attractiveness (Expt 1, self)	0.44	0.20	0.18	–		
Attractiveness (Expt 2, other)	0.17	0.21	0.28	0.13	–	
Attractiveness (Expt 3, other)	0.17	0.21	0.31	0.21	0.82	–
Female						
Confidence (Expt 1, self)	–					
Confidence (Expt 2, other)	0.09	–				
Confidence (Expt 3, other)	0.21	0.59	–			
Attractiveness (Expt 1, self)	0.50	0.45	0.32	–		
Attractiveness (Expt 2, other)	0.10	0.64	0.39	0.37	–	
Attractiveness (Expt 3, other)	0.07	0.60	0.48	0.30	0.89	–

the reliability of these measures across different sets of participants, we correlated confidence ratings from the ‘interview preparation’ video with confidence ratings from the ‘interview’ video. Despite the fact that the videos were different and were viewed by different raters, there was a significant correlation in confidence measures for videos with male ($r = 0.48$, $P < 0.001$) or female ($r = 0.59$, $P < 0.001$) targets. We also found a significant correlation for judgements of attractiveness for static photographs for both male ($r = 0.82$, $P < 0.001$) and female ($r = 0.89$, $P < 0.001$) targets, although in this case, the image was identical across the two experiments.

Finally, we compared confidence and attractiveness scores across all three experiments (Table 2). This shows that self-reported confidence was correlated with self-reported attractiveness in both female ($r = 0.50$) and male ($r = 0.44$) groups, but that it was not correlated with other-reported confidence or attractiveness. Other-reported confidence was found to correlate with both self-reported and other-reported attractiveness for all combinations ($r = 0.32$ – 0.64) in female participants. However, the correspondence between other-reported confidence and attractiveness was less apparent for male participants ($r = 0.18$ – 0.31). Finally, self-reported attractiveness was correlated with other-reported attractiveness in female ($r = 0.30$ – 0.37), but not male ($r = 0.13$ – 0.21) participants. These findings provide further support for the gender-specific dissociations in self-reports and other-reports traits shown in this study.

Discussion

The aim of this study was to determine whether self-evaluations of esteem or confidence correspond with evaluations made by other people. To address this question, we compared measurements of confidence in participants with and without dandruff. Despite the fact that participants with dandruff showed significant differences in a quality of life measure that is specific to scalp health, they were not significantly different from participants with healthy scalps in their self-evaluation of esteem or confidence. In contrast, we found a significant difference in confidence based on the evaluations by other observers when they viewed muted videos of participants with and without dandruff. Interestingly, male participants with dandruff were rated as having lower confidence compared to healthy controls, but in Experiment 2 there was no corresponding difference for female participants and in Experiment 3, the opposite pattern was found for females. These findings support previous findings showing a greater discrepancy between explicit and implicit measures in men compared to women [23].

When we encounter other people for the first time, we often form a first impression of their character [30,34]. These first impressions are highly reliable and can have important real-life consequences (see [22] for a review). Previous studies have also shown observers make reliable judgements about personality traits based on watching short videos of people that they have not previously met [1–3,33]. Reliability in this context reflects the fact that the observers make similar responses, but does not necessarily imply that these responses are accurate. In this study, we used this method to evaluate self-esteem. Participants were asked to rate the confidence of a person based on videos of them either preparing for or giving an interview. We found that these measures were reliable across these two different settings. Evaluations of confidence during the preparation stage of the interview were significantly correlated with the evaluations of confidence when participants were giving an interview. Importantly, this correlation was evident despite the fact that different observers were used to rate the different videos. Because participants were not given any explicit instructions during the interview preparation and the videos were shown without sound, these findings suggest that the observers were very sensitive to subtle cues that are conveyed by body movements. This is consistent with a recent study by Thoresen *et al.* [33] who showed that personality traits can be reliably reported by impoverished visual stimuli that only conveyed motion-related cues.

A key finding from this study was the dissociation between the evaluations of confidence based on self-report compared to the evaluation of confidence based on the ratings of others. This was evident in the group differences in confidence ratings between participants with and without dandruff. However, we also found that self-reports of confidence were not correlated with other-reports of confidence. Current theories suggest that levels of self-esteem will vary according to how well a person feels valued, accepted and liked by other people [5,9,10,15,20,21,26]. Despite the important influence that other people’s views have on self-esteem, most measures of self-esteem rely on self-evaluation. The difference between explicit self-evaluations and the evaluation of others suggests that they are measuring different properties. Indeed, a range of studies have shown that explicit measures of self-esteem are not always consistent with implicit measures, such as the IAT [6,18,28]. The assumption is that implicit measures access information that is not directly available to conscious awareness. The dissociation we find in this study suggests that

evaluations of confidence by others may correspond more with implicit measures of self-esteem. Future studies that combine implicit measures of self-esteem with the evaluations by others will be necessary to determine the extent to which there is a link.

We found that the dissociation between self-evaluations and the evaluations by others was specific to male participants. That is, the difference based on explicit self-evaluations and the evaluations by others between the dandruff and healthy groups was only evident for male targets. A number of studies have shown gender differences in the evaluation of self-esteem, with women being more influenced by relationships and men being more influenced by objective success [17,29]. Consistent with the findings of this study, Pelham *et al.* [23] demonstrated that women show greater correspondence than men between implicit and explicit indices of self-esteem. Interestingly, we found that different self-ratings of confidence, others perception of confidence, Scalp-Dex, PANAS and the State Self-Esteem Scale were more correlated in women than in men. Together, these findings are consistent with the idea that women are more likely to trust and accurately report their feelings and intuitions.

To determine whether differences in confidence ratings might reflect the attractiveness of a person, we compared these measures. We found that there was no difference in the attractiveness rating across groups in both experiments. This suggests that group differences in attractiveness do not explain the group differences in confidence ratings we observe. Nevertheless, we did find that self-reported confidence was correlated with self-reported attractiveness in both female and male groups. However, self-reported confidence

was not correlated with other-reported confidence or other-reported attractiveness. Other-reported confidence was found to correlate with both self-reported and other-reported attractiveness in female participants, but to a much lesser extent for male participants. Finally, self-reported attractiveness was correlated with other-reported attractiveness in female ($r = 0.30-0.37$), but not male ($r = 0.13-0.21$) participants. These findings provide further support for the gender-specific dissociations between self-reports and the reports of others that we shown in this study.

In conclusion, we show that participants with dandruff were not significantly different from control participants on self-evaluations of esteem or confidence. However, we did find differences in the evaluation of confidence by other observers when they rated muted videos of the participants with and without dandruff while they prepared for or gave a presentation in an interview scenario. In both scenarios, male, but not female, participants with dandruff were rated as having lower confidence compared to healthy controls. These findings are consistent with previous reports showing a greater discrepancy between explicit and implicit measures of confidence in men compared to women.

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