

“Don’t Bother Your Pretty Little Head”: Appearance Compliments Lead to Improved Mood but Impaired Cognitive Performance

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Rotem Kahalon¹ , Nurit Shnabel¹, and Julia C. Becker²

Abstract

We examined whether appearance compliments, despite their flattery, undermine cognitive performance. In Study 1, women participants ($N = 88$ Israeli university students) who wrote about past situations in which they had received appearance compliments (but not competence-related compliments) showed worse math performance than women in a control/no compliment condition—especially if they scored high on trait self-objectification (TSO). In Study 2, men and women participants ($N_{\text{women}} = 73, N_{\text{men}} = 75$ Israeli university students) received bogus occupational evaluation feedback, which did or did not include an appearance compliment. Although appearance compliments led to mood improvement among participants with high TSO, they also undermined math performance among both women and men. Because receiving appearance compliments is a common experience for women (whereas men are typically complimented for their competencies), our findings suggest that appearance compliments serve as a mechanism that might subtly perpetuate gender inequality. For the promotion of societal gender equality, it is important that the public is aware that appearance compliments, even if meant well, may create sexist environments.

Keywords

appearance compliments, cognitive performance, women in math, objectification, subtle mechanisms of gender bias

Western societies place enormous value on women’s physical attractiveness (e.g., Bartky, 1990; Rhode, 2010; Wolf, 1991) and strongly reward women—through increased popularity, marriage opportunity, economic benefits and, in some cases, job market opportunities—for having desirable bodies and looks (e.g., Buss & Shackelford, 2008; Hakim, 2010; Kwan & Trautner, 2009; Rhode, 2010). Due to this emphasis on women’s appearance, receiving comments, including compliments, about their looks is a part of women’s daily lives (Swim, Hyers, Cohen, & Ferguson, 2001). Indeed, women receive many more appearance compliments than do men (Eckert & McConnell-Ginet, 2003; Parisi & Wogan, 2006), who typically receive skill compliments related to their abilities and competence (Parisi & Wogan, 2006). Given the strong incentives associated with good looks, it is perhaps unsurprising that many women find appearance compliments, which confirm their success in living up to their prescribed gender role (Cejka & Eagly, 1999), to be pleasant and even empowering (Moffitt & Szymanski, 2011; see also Liss, Erchull, & Ramsey, 2011 for a discussion on women’s possible enjoyment of their sexual objectification). The goal of our research was to examine the effects of receiving appearance compliments on women’s cognitive performance—an

issue that has received relatively little attention in the social psychology literature.

Previous scholars have shown that benevolent (i.e., seemingly kind and chivalrous; Glick & Fiske, 2001) manifestations of sexism might undermine women’s cognitive performance. In one study (Vescio, Gervais, Snyder, & Hoover, 2005), women who were treated patronizingly by their male boss—who gave them much praise but few valued resources—performed worse than women who did not receive such praise, when solving quantitative and analytical problems. In another study (Dardenne, Dumont, & Bollier, 2007), women who were offered unsolicited help by a man job recruiter performed worse on subsequent problem-solving and reading-span tests; overtly hostile sexist behavior of a man recruiter did not lead to impaired performance. In the current study, we tested our theorizing that appearance

¹ The School of Psychological Sciences, Tel Aviv University, Tel Aviv, Israel
² Institute of Psychology, Osnabrück University, Osnabrück, Germany

Corresponding Author:

Rotem Kahalon, The School of Psychological Sciences, Tel Aviv University, Ramat Aviv, Tel Aviv 69978, Israel.
Email: rotemkah@mail.tau.ac.il

compliments, despite their flattery, might impair women's cognitive performance—similar to consequences of other benevolently sexist behaviors. Appearance compliments may serve as a subtle social mechanism that perpetuates gender inequality because they ultimately undermine women's achievements.

Our hypothesis was based on experimental findings that women showed impaired cognitive performance following situations that induced them to think about their looks. Such situations are said to divert women's cognitive resources away from the task at hand (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998) and make them care more about how they look than about how well they do (Quinn, Chaudoir, & Kallen, 2011). In line with this argument, women participants who were asked to try on a swimsuit, as compared to a sweater, and then look in the mirror performed worse on a subsequent math test (Fredrickson et al., 1998) and on a modified Stroop test (Quinn, Kallen, Twenge, & Fredrickson, 2006). Similarly, women who were "checked out" by a trained male experimenter (Gervais, Vescio, & Allen, 2011), or whose body was photographed by a male experimenter (Gay & Castano, 2010; Guizzo & Cadinu, 2016), showed impaired cognitive performance as evaluated by a math test (Gay & Castano, 2010; Gervais et al., 2011); a letter number sequence (LNS) test, which tests working memory capacity (Gay & Castano, 2010); and a sustained attention to response task, which tests the ability to sustain attention on repetitive stimuli (Guizzo & Cadinu, 2016).

Women's susceptibility to cognitive deficits in response to situations that induce appearance-related thoughts may depend on their trait self-objectification (TSO; Noll & Fredrickson, 1998). TSO refers to generally stable individual differences in the extent to which women are chronically preoccupied with their physical appearance (Aubrey, 2006; Moradi & Huang, 2008). Fredrickson, Roberts, Noll, Quinn, and Twenge (1998) define TSO as the extent to which women think about their own body from a third-person perspective, focusing on observable body attributes ("How do I look?") rather than on non-observable body attributes ("What am I capable of?" or "How do I feel?"). According to objectification theory (Fredrickson & Roberts, 1997), a woman's TSO reflects her internalization of the dehumanizing cultural message that her value is determined by how attractive men find her (i.e., "the male gaze"). Although high TSO does not mean dissatisfaction with one's body (e.g., women who post pictures of themselves in swimsuits on Facebook may be high on TSO yet feel proud and happy about their bodies), it is associated with negative consequences for women's emotional well-being (Mercurio & Landry, 2008).

Of direct relevance to the present research, the results of several studies revealed that women with high TSO, who, due to their chronic preoccupation with their appearance, might be more responsive to related situational cues, show greater performance deficits in response situations that induce them to think about their looks. For instance, Gay and Castano

(2010) found that women whose bodies were filmed by a man (vs. a woman) confederate showed impaired performance on a subsequent LNS test only if they were high on TSO. Other researchers, however, did not find moderation by TSO. For example, Fredrickson and colleagues (1998) found that women's impaired math performance in the swimsuit (vs. the sweater) condition was not moderated by their level of TSO. The evidence pertaining to the moderating role of TSO is thus somewhat inconsistent. Despite this inconsistency, previous research indicates that situations that induce appearance-related thoughts may lead to impaired cognitive performance, at least among some women.

A limitation of the existing studies, however, is that they focused on situations that were unpleasant, as they facilitated the experience of the discrepancy between the ideal and real self (e.g., after trying on a swimsuit, women reported greater body shame; Fredrickson et al., 1998) or apprehension of negative evaluation by others (e.g., the man confederate who videotaped their body; Gay & Castano, 2010). The question remains whether inducing appearance-related thoughts among women leads to impaired cognitive performance even in more pleasant situations. Of particular interest is the common, daily situation that may induce appearance-related thoughts in women—namely, when they receive appearance compliments.

To date, only two studies have experimentally examined the effects on women of receiving appearance compliments. Fea and Brannon (2006) assigned women participants to receive an appearance-related compliment ("You are a very nice-looking person"), a character-related compliment ("You sound like a nice person"), or no compliment from a woman confederate. The authors found that receiving either appearance-related or character-related compliments decreased feelings of distress and sadness among women high on TSO, but did not affect women with low TSO. In Tiggemann and Boundy's (2008) study, women participants received either an appearance compliment ("I was just looking and I really like your top") or no compliment from a woman confederate in an environment that was either standard or objectifying (i.e., encouraging participants' view of themselves from an external, third-person perspective). Specifically, in the objectifying condition, besides normal furniture, such as desks and computers, the lab room contained a set of bathroom scales, two full-length mirrors, and a small display of fashion magazine covers. Regardless of environment condition or level of TSO, appearance compliments resulted in decreased negative mood for all participants. In addition, however, the appearance compliment led to heightened body shame among women with high TSO—a finding that is consistent with correlational evidence that women's good feelings about receiving appearance compliments were associated with heightened body surveillance and body dissatisfaction (Calogero, Herbozo, & Thompson, 2009).

Finally, in the study by Tiggemann and Boundy (2008), receiving an appearance compliment did not affect

participants' cognitive performance, as assessed by a logical reasoning and a spatial-orientation task. Although this latter finding is opposed to our hypothesis, we suspected that the null effect may have stemmed from the relatively weak manipulation. The appearance compliment used by Tiggemann and Boundy related to the participant's clothing rather than to her face or body and was conveyed by a woman rather than a man. We reasoned that stronger manipulations might reveal that appearance compliments do interfere with women's cognitive performance.

The Present Research

The main goal of our research, consisting of two experiments, was to test the prediction that appearance compliments from men would undermine women's performance on a subsequent math test. Also, because women high on TSO reported that receiving appearance comments had a stronger psychological effect on them than did women low on TSO (Calogero et al., 2009), we examined whether TSO would moderate the effect of appearance compliments on performance.

In two studies, we manipulated appearance compliments using complementary methodologies. In Study 1, we used a recall procedure in which women participants wrote about real-life situations in which they had received an appearance compliment from a man. Recall procedures, which have been used successfully in previous research within the framework of objectification theory (e.g., Calogero, 2013; Loughnan, Baldisarri, Spaccatini, & Elder, 2017), have the advantage of inducing high personal involvement. In Study 2, participants received feedback on their curriculum vitae (CV) from a (fictitious) vocational counselor who complimented their looks based on the photograph attached to their CV. The advantage of this procedure, which we developed for this research, is that it tested the effect of compliments experienced "here and now" (rather than relying on retrospective recall). Furthermore, this manipulation is less explicit than the recall manipulation and simulates women's everyday experiences.

In Study 2, we extended Study 1 in two additional ways. First, to shed light on whether appearance compliments, despite their harmful effects to performance, are pleasant for women, in Study 2, we tested the prediction that receiving these compliments would have a positive effect on participants' mood (consistent with Fea & Brannon, 2006). Second, Study 2 tested the effect of appearance compliments on both men and women participants. As explained in detail in the introduction to Study 2, it was important to examine the effect on men, given the contradicting findings (e.g., Fredrickson et al., 1998, vs. Hebl, King, & Lin, 2004) pertaining to whether or not men's math cognitive performance is impaired following situations that induce them to think about their appearance. To our knowledge, this is the first study to experimentally test the effects of appearance compliments on men (for correlational research on this topic, see Nowell & Ricciardelli, 2008; Schuster, Negy, & Tantleff-Dunn, 2013).

In sum, the goal of our research was to test whether appearance compliments, despite their uplifting mood effect, impair women's (and possibly men's) math performance and to examine whether TSO moderates this effect. Experimentally demonstrating that this impairment occurs would provide strong empirical support for the claim that "appearance compliments represent a seemingly innocuous type of interpersonal feedback that may have detrimental consequences" (Calogero et al., 2009, p. 120).

Study 1

In Study 1, we first measured women participants' TSO (Noll & Fredrickson, 1998) and then assigned them to three experimental conditions: an appearance-compliment condition, a competence-compliment condition, or a control/no compliment condition. Adapted from Calogero (2013), who used a recall writing exercise to induce women participants with state self-objectification (i.e., situational preoccupation with their appearance), participants in the appearance-compliment condition were asked to recall and write about a situation in which a man complimented them on their looks. Because responses to compliments vary depending on the particular social context (e.g., the same compliment is interpreted in a different light when conveyed by a colleague vs. a dating partner; Koudenburg & Gordjin, 2011), we asked all participants to recall a situation in which the source of the appearance compliment was a man with whom they were not in an intimate relationship.

We focused on non-intimate relationships for two reasons. First, within non-intimate relationships, appearance compliments reflect the type of subtle social policing (representing men's "right" to evaluate women physically; Quinn, 2002), the consequences of which we were interested in investigating, whereas appearance compliments may also reflect mutually reciprocated attraction within intimate relationships. Second, the implications of impairment in math performance—the outcome variable of interest—are more critical in contexts of non-intimate relationships, such as organizational and academic environments, which are typically cognitively demanding, than in contexts of intimate relationships.

In the competence-compliment condition, participants were asked to recall and write about a situation in which they had received a compliment about their competence, skills, or intelligence from a man with whom they were not in an intimate relationship. The purpose of this condition was to show that compliments related to another domain would not have the same detrimental effects (see Fea & Brannon's, 2006, use of a three-cell design). Finally, participants assigned to the control/no compliment condition were asked to recall and write about a situation in which they had enjoyed a nice view or landscape—a pleasant situation that did not involve a compliment of any type.

Following the assignment to the experimental conditions, participants completed a short math test. We tested the predictions that (a) participants' test scores in the appearance-compliment condition, but not in the competence-compliment condition, would be lower than in the control/no compliment condition and (b) this effect would be stronger for participants with high TSO (i.e., a two-way interaction).

Method

Participants

Participants were undergraduate women students from a large Israeli university, majoring in diverse disciplines including finance and economy, life and brain science, psychology, engineering, medicine, and exact sciences (i.e., math-based sciences such as physics). We used a student sample due to both feasibility concerns (the experiment was conducted in a university laboratory) and theoretical considerations. According to objectification theory (Fredrickson & Roberts, 1997; see also McKinley, 2011), young women find themselves in "the objectification limelight." For example, they are more likely than older women to receive appearance-related comments from men. Therefore, examining the effects of receiving appearance compliments on this particular population is of theoretical interest. Also, the main dependent variable of interest (i.e., cognitive performance) is of particular importance for members of the student population, who, more so than members of the corresponding non-student population, pursue career paths that require high cognitive performance.

A power analysis using the G*Power calculator (Faul, Erdfelder, Buchner, & Lang, 2009) revealed that 92 participants had to be recruited to detect a medium effect size ($f^2 = .15$) at a 5% two-sided significance level and power of 80%. Due to overbooking, we ended up recruiting 95 participants. Participants were recruited through advertisements placed around the campus and online; students were compensated by either course credit or money (30 NIS; US\$8). As a cover story, participants were invited to take part in "a lab study about everyday experiences." The final sample comprised 88 participants, $M_{\text{age}} = 23.61$, $SD = 2.30$, $M_{\text{BMI}} = 21.77$, $SD = 4.63$, after the exclusion of seven outliers due to a high Cook's (1977) distance value—note that the key appearance compliment (vs. control) condition \times TSO interaction remained significant, $\beta = -.27$, $t(89) = -2.05$, $p = .044$, when including all 95 participants. All participants were Israeli and Jewish women; their native tongue was Hebrew; 92% described themselves as heterosexual and the rest as gay (1%), bisexual (4%), or not wanting to indicate their sexual orientation (3%).

Measures

All the measures in Studies 1 and 2 were translated into Hebrew by the first and second authors, who decided together which translation was the most accurate in the case of

discrepancies. The measures were then back-translated into English by a bilingual researcher with a master's degree in natural language processing and information extraction. Comparisons were made between the original and back-translated versions and, where discrepancies existed, the first and second authors worked with the bilingual researcher to resolve them.

TSO. We used Noll and Fredrickson's (1998) self-objectification questionnaire (SOQ) to assess participants' tendency to self-objectify. The SOQ is a commonly used measure to assess participants' habitual self-objectification (Calogero, 2011). It was shown (in a sample of U.S. women college students) to be positively correlated with appearance anxiety ($r = .52$) and body-size dissatisfaction ($r = .46$), indicating that, as intended, these constructs are related yet not overlapping (Noll & Fredrickson, 1998). Participants are asked to rank the importance of 10 body attributes for their physical self-concept from 0 (*has the least impact on my physical self*) to 9 (*has the greatest impact on my physical self*). Half of the attributes are related to observable physical attributes (such as weight and sex appeal), and half are related to non-observable physical attributes (such as health and energy level). The sum of ranks given to the five non-observable attributes is subtracted from the sum of ranks given to the five observable attributes, such that higher difference scores represent higher levels of TSO. The possible range for this measure is from -25 to 25 , but the actual range in our sample was from -23 to 25 ($M = 3.23$, $SD = 11.23$); 64% of participants' scores were in the range between 1 standard deviation (SD) below and above the mean.

A limitation of the SOQ is that its rank-order format yields ipsative data for which measures of internal consistency cannot be calculated. Nevertheless, we chose not to use the alternative measure of TSO developed by Lindner and Tantleff-Dunn (2017), which yields interval data, because we were concerned that its blatantly worded items (e.g., "How I look is more important to me than how I think or feel") might reveal the real purpose of the study. Also, in order to conceal the study's purpose, participants ranked the relative importance of attributes related to their social self-concept (e.g., sociability, leadership, popularity).

Math performance. Cognitive performance was assessed using a math test similar to the math section of the Graduate Record Examination (a standardized test required for admission into most graduate programs in the United States). The difficulty level of this test was relatively high; we chose it because situational effects on cognitive performance are known to be particularly pronounced in difficult, cognitively demanding tasks (e.g., Keller, 2007). This test was adapted from a study by Shnabel, Purdie-Vaughns, Cook, Garcia, and Cohen (2013), which examined the effect of self-affirmation on stereotype threat and consequent math performance among U.S. women undergraduates.

The Hebrew version of this test was used in a pilot study (unrelated to the present study) among 79 women and 72 men Israeli undergraduates. Establishing that the test is tapping into math ability, participants' test scores were moderately correlated with their score in the Israeli Psychometric Test (the Israeli equivalent to the SAT), $r = .41, p < .001$, and their final grade in the Bagrut math test, the Israeli matriculation exam (the Bagrut grade is calculated as the product term of the Bagrut exam score multiplied by the exam's difficulty level—the number of Yehidot, ranging from 3 to 5). Using this product term is common practice in Israeli universities' calculation of their entrance threshold, $r = .44, p < .001$.

The test's final version consisted of 19 multiple-choice questions (the test originally consisted of 20 questions but, due to a technical display problem, one geometry question was removed). Participants had 15 min to complete the test, earning one point for each correct answer. An example item is: "A farmer has two rectangular fields. The larger field has twice the length and four times the width of the smaller field. If the smaller field has area K, then the area of the larger field is greater than the area of the smaller field by what amount? (a) 2 K, (b) 6 K, (c) 7 K, (d) 8 K, (e) 12 K." Correct answer is "c."

Procedure

All the instructions and procedures were computerized and administered in Hebrew using the Qualtrics platform. To avoid missing data, we used a forced-response format such that, except for the math test, participants had to provide a response to each question (otherwise, they could not proceed). Participants first completed the SOQ (Noll & Fredrickson, 1998) and were then randomly assigned to the three experimental conditions. As described above, they were asked to recall and write about a situation in their lives in which a man with whom they were not in an intimate relationship had complimented their appearance (appearance compliment condition), their academic or professional achievements (competence compliment condition), or a situation in which they enjoyed a nice urban view or natural landscape (control/no compliment condition).

An independent pilot study conducted prior to Study 1, using different participants, confirmed that the appearance-compliment condition that we used induced appearance-related thoughts among women. Participants in the pilot were 50 Israeli Jewish women volunteers, $M_{\text{age}} = 32.82, SD = 7.71, M_{\text{BMI}} = 23.63, SD = 3.58$, who were recruited through snowball sampling to complete a web-based questionnaire and randomly assigned to three experimental conditions (appearance compliment, competence compliment, or control/no compliment). Following the experimental manipulation, the pilot-study participants completed a modified version of the body-surveillance scale (McKinley & Hyde, 1996), which assesses the situational monitoring of their appearance using five 5-point items (e.g., "right now, I am

Table 1. Means and Standard Deviations for Trait Self-Objectification and Math Performance for the Three Experimental Conditions (Study 1).

Variables	Appearance Compliment <i>M (SD)</i>	Competence Compliment <i>M (SD)</i>	Control/No Compliment <i>M (SD)</i>
Trait self-objectification (TSO)	2.10 (11.09)	7.30 (8.76)	0.81 (12.52)
Math performance	2.55 (1.84)	2.74 (1.35)	3.25 (1.70)

Note. $N = 88$ women participants. Despite randomization, the most preferable categorization method (e.g., as compared to matching; Heckman, Ichimura, Smith, & Todd, 1996), there was a marginally significant difference in pre-existing levels of TSO between the experimental conditions, $F(2, 85) = 2.76, p = .069$.

thinking about how I look"). The internal consistency reliability for the pilot sample was high, $\alpha = .92$, consistent with previous reports (e.g., $\alpha = .95$ in Breines, Crocker, & Garcia's, 2008, sample). Planned comparisons revealed that participants' appearance monitoring was significantly higher in the appearance-compliment condition ($M = 2.73, SD = 0.82$) than in either the competence-compliment condition ($M = 1.95, SD = 1.12, t(47) = 2.27, p = .028$, or the control condition ($M = 1.62, SD = 0.88, t(47) = 3.62, p = .001$). The difference between the competence-compliment and the control/no compliment conditions was non-significant, $t(47) = 1.01, p = .318$. Thus, recalling situations in which they had received appearance compliments had the intended effect on participants' appearance-related thoughts. We chose to test the effect of the experimental manipulation on participants' appearance-related thoughts in a pilot study, but not in Study 1 itself, due to our concern that including this blatantly worded measure might expose the real purpose of Study 1.

Participants in Study 1 completed the difficult math test right after the experimental manipulation. Following the test, participants provided their demographic information including height and weight, which allowed us to calculate their body mass index (BMI), which did not differ across experimental conditions, $F(2, 82) = 0.110, p = .896$. The participants were then thanked and debriefed.

Results and Discussion

Data files for the pilots and Studies 1 and 2 can be accessed either through the Open Science Framework (<https://osf.io/dfkvp>) or upon email request from the first author. Table 1 presents descriptive statistics. To test our predictions, we conducted a regression analysis with participants' math score as the dependent variable. The predictors were the experimental condition (dummy coded into two contrasts, such that the control condition was the reference category); TSO (standardized); and their two-way interactions (i.e., Appearance Compliment vs. Control \times TSO and Competence

Table 2. Results of Regression Analysis on Math Performance (Study 1).

Predictors	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>sr</i>	ΔF	<i>R</i> ²	ΔR^2
Block I									
Intercept	3.32	.29		11.54	.000				
Appearance compliment (vs. control)	−0.78	.42	−.22	−1.88	.064	−.20			
Competence compliment (vs. control)	−0.74	.46	−.21	−1.62	.109	−.17			
Trait self-objectification (TSO)	0.58	.29	.32	2.02	.047	.21	1.26	.04	.04
Block II									
Appearance Compliment × TSO	−1.07	.44	.33	−2.41	.018	−.25			
Competence Compliment × TSO	−0.17	.53	−.04	−0.32	.750	−.03			
							3.06	.11	.07*

Note. *N* = 88 women participants. Model summary Block I: *R* = .21, *R*_{adj}² = .01, *F*(3, 84) = 1.26, *p* = .293. Model summary Block II: *R* = .33, *R*_{adj}² = .05, *F*(2, 82) = 2.02, *p* = .085. *sr* = semipartial coefficients.

**p* = .052.

Compliment vs. Control × TSO). The two contrasts (between the compliment conditions vs. the control condition) and TSO were included in the first block, and the two 2-way interactions were added in the second block. As Table 2 shows, neither the competence compliment condition nor its interaction with TSO significantly affected participants' math scores.

In contrast, and in line with predictions, participants in the appearance-compliment condition tended to perform worse than participants in the control/no compliment condition (see Table 1). This marginal effect of the appearance compliment condition was qualified by a significant Appearance Compliment versus Control × TSO interaction. Interpreting this interaction using Preacher, Curran, and Bauer's (2006) online tool revealed that appearance compliments led to impaired math performance among women who were high in TSO (i.e., 1 *SD* above average), *B* = −1.85 (*SE* = .63), *p* = .004, but not among women who were low in TSO (i.e., 1 *SD* below average), *B* = 0.29 (*SE* = .59), *p* = .621. Figure 1 shows the obtained pattern of results. In summary, consistent with our predictions, appearance compliments impaired women's math performance, especially if the women had high TSO—that is, if they were chronically preoccupied with their physical appearance.

Study 2

In Study 2, we aimed to replicate Study 1 conceptually, as well as to extend it in several ways. First, although the retrospective methodology used in Study 1 has the advantage of reflecting diverse, real-life situations, it has two major limitations. The first limitation is that the conclusions drawn from the study may be limited to past situations that have been thought about and processed. It is unclear whether the immediate response to appearance compliments happening “here and now” would be similar. The second limitation is that each participant recalled and wrote about a different situation, which compromised standardization. To address these



Figure 1. Number of correct answers on the math test among women participants with high (+1 *SD*) and low (−1 *SD*) trait self-objectification in the control/no compliment and appearance-compliment conditions (Study 1).

limitations, in Study 2, all participants assigned to the appearance-compliment condition received the same appearance compliment, conveyed by an ostensible vocational counselor who allegedly read and responded to the participant's CV, which included a photograph of the participant.

Study 2 also included both men and women participants. Objectification theorists (Frederickson & Roberts, 1997) would predict that the negative effect of appearance compliments on cognitive performance should be unique to women, who are “socialized in a culture that sexually objectifies the female body” (Frederickson et al., 1998, p. 280). Thus, exposure to the “male gaze” would divert women's attention from the task at hand (e.g., by increasing preoccupation with appearance-enhancement practices; Quinn et al., 2011) and lead to impaired performance, whereas exposure to the “female gaze” would not lead to a similar distraction among

men. In line with this reasoning, Fredrickson et al. (1998) found that trying on swim trunks impaired women's, but not men's, math performance.

An opposing prediction, however, can be derived from Green and colleagues' (2014) findings that looking in a full-length mirror (vs. exposure to neutral stimuli, such as nature images) led to a prolonged "orienting response" (lower mean heart rate, indicative of heightened cognitive processing of a given stimulus; Graham & Clifton, 1966) among both men and women. This finding suggests that when people are placed in situations that induce them to think about how they look, both men and women divert cognitive resources to their physical appearance (Green et al., 2014), which should result in impaired performance among both genders. In line with this reasoning, Hebl, King, and Lin (2004) found that men participants who tried on Speedo briefs experienced performance impairment on a math test, similar to the corresponding impairment observed among women participants who tried on swimsuits. Given this inconsistency, it was important to examine directly whether the detrimental effects of appearance compliments on performance pertain to men as well as women. It should be noted, however, that even if appearance compliments are found to impair performance among both genders, the frequency of real-life exposure to such compliments is much higher among women (Swim et al., 2001), for whom these small instances might compound to larger negative outcomes.

Finally, Study 2 examined the effects of appearance compliments on participants' mood. Based on previous experimental findings (Fea & Brannon, 2006; Tiggemann & Boundy, 2008), we expected that appearance compliments would have a positive effect on women participants' mood. In line with correlational findings that, among men, receiving appearance compliments was associated with positive affective outcomes (Schuster et al., 2013), we expected a positive effect on men's mood as well. Demonstrating this ironic "positive mood, negative performance" effect was important for establishing that appearance compliments operate in a subtle manner that is not overtly hostile or demeaning and, as such, their detrimental consequences are likely to go unnoticed (see Calogero et al., 2009).

We used a 2 (Gender: Man, Woman) \times 2 (Experimental Condition: Control/No Compliment, Appearance Compliment) design. As a cover story, we presented the study as a two-session study about vocational selection. We used the vocational context because this is precisely the social context in which a person's cognitive performance matters. In the first session, participants completed a measure of their TSO and had to upload a standard CV form that included a photograph of themselves. In the second session, participants received bogus feedback about their CV from a vocational counselor. Women received feedback from a man who was portrayed as a counselor and men received feedback from a woman who was portrayed as a counselor. Depending on the experimental condition, the feedback did, or did not, include

a compliment about their appearance, allegedly based on their picture. Participants then reported their mood and completed a math test that they were told was commonly used in vocational selections.

We tested the prediction that appearance compliments would lead to better mood, especially among women and men participants who score high on TSO (consistent with Fea & Brannon, 2006). Appearance compliments were also expected to have a negative effect on women's math performance and to have either a negative or no effect on men's math performance. Consistent with Study 1, the effects on math performance were expected to be stronger among participants with high TSO.

Method

Participants

A power analysis using the G*Power calculator (Faul et al., 2009) revealed that 151 participants have to be recruited to detect a medium effect size ($f^2 = .15$) at a 5% two-sided significance level and power of 80%. Due to overbooking, we recruited 156 participants. The final sample comprised 73 women and 75 men who were undergraduates majoring in diverse disciplines, $M_{\text{age}} = 23.79$, $SD = 1.96$, $M_{\text{BMI}} = 22.48$, $SD = 3.24$, after the exclusion of eight outliers based on their Cook's distance; the key main effect of the appearance compliment condition remained significant, $\beta = -.24$, $t(147) = -2.21$, $p = .029$, when all 156 participants were included. All the participants were Israeli Jewish students whose native tongue was Hebrew; 94% described themselves as heterosexual and the rest as gay (4%), bisexual (1%), or not wanting to indicate their sexual orientation (1%). Participants were paid 40 NIS (US\$10) in return for their participation.

Measures

As in Study 1, participants filled out a measure of their TSO (Noll & Fredrickson, 1998), range = -25 to 25 ; $M_{\text{women}} = 2.78$, $SD_{\text{women}} = 13.57$, $M_{\text{men}} = -4.40$, $SD_{\text{men}} = 12.45$; 69% of the participants' scores fell in the range between 1 SD below and above the mean. To conceal the study's real purpose, participants also completed various filler questionnaires that related to other domains (see Study 1). Participants also completed the same difficult math test as in Study 1. However, due to the low math scores observed in Study 1, participants in Study 2 had 30 min (instead of 15) to complete the test.

Manipulation check. To confirm that participants understood the feedback as intended, they were asked to rate the vocational counselor's evaluation of their abilities on three dimensions—cognitive skills, social skills, and looks (the first two served as fillers)—using 7-point Likert-type scales (1 = *the counselor's evaluation was negative*, 4 = *the counselor's evaluation was either neutral or did not relate to this dimension*, 7 = *the counselor's evaluation was positive*).

Mood

We used the short version of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), which consists of positive and negative mood scales (e.g., “excited,” “upset”). In a large probability sample ($N = 2,651$), the PANAS was found to have good factor structure and factor correlations across age (Mackinnon et al., 1999). Ben-Zur (2002) translated the PANAS into Hebrew, demonstrating similar psychometric qualities to those observed for the English version (e.g., the internal consistency reliabilities were high for both the positive affect, $\alpha = .84$, and the negative affect, $\alpha = .91$, subscales).

When completing the PANAS, respondents are asked to rate the extent to which they are experiencing each feeling “right now” (from 1 = *not at all* to 5 = *very much*). Although the PANAS includes both positive and negative affect scales, the distinction between the two was not theoretically important for our purposes. We, therefore, decided to treat the two scales (which were significantly correlated, $r = -.25$, $p = .002$) as a single variable by reversing the negative items. A total PANAS score was calculated, such that higher scores indicated a more positive mood; the internal consistency reliability was acceptable ($\alpha = .75$).

Procedure

The experiment was administered in Hebrew. As a cover story, participants were invited to take part in “an occupational psychology study that examines new vocational selection tools.” The study included two sessions: The first session was conducted online (participants completed it at their own time and place of convenience) and the second took place in the lab. In both sessions, all the materials (i.e., instructions, manipulations, and measures) were computerized using the Qualtrics platform and, to avoid missing data, we used a forced choice format.

In the first session, participants filled out a standard CV template and provided information on their education, academic achievements, occupational experience, and vocational preferences (e.g., outdoor vs. indoor work, working independently vs. in a team). They also added a photograph of themselves that represented the way they “would show up at a job interview.” As in Study 1, participants filled out a measure of their TSO (Noll & Fredrickson, 1998), disguised with filler items.

The second session of the study took place about 1 week later. Participants came to the lab and received feedback on their CV, ostensibly written by a vocational counselor, a man for women participants and a woman for men participants, who, participants were told, was serving as an intern at the university career center and had read their CV. Our decision to manipulate the gender of the person giving the appearance compliments was based on previous studies that found that among women, state self-objectification rose when

anticipating “a male gaze,” but not “a female gaze” (Calogero, 2004; Guizzo & Cadinu, 2016). Moreover, Tiggemann and Boundy (2008) found that an appearance compliment conveyed by a woman confederate did not influence women participants’ cognitive performance. Thus, we had the man vocational counselor convey the appearance compliment to women participants of Study 2, and a woman vocational counselor convey the appearance compliment to men participants.

The feedback that participants received on their CV was administered via computer, to maximize standardization. We intentionally avoided conveying the appearance compliment by an in vivo confederate because we were concerned that the confederate’s nonverbal behavior might vary unintentionally in response to different participants. We used information provided by the participant in the study’s first session to give each person personalized feedback. Specifically, participants read the following feedback: “Hello [participant’s name], I read your résumé, and I can see that you majored in [participant’s major] in high school, studied [3/4/5] math units, and prefer to work [independently/in a team] in an [indoors/outdoors] working environment that has a [relaxed/dynamic] nature.” The exact content, e.g., whether the participant preferred to work indoors or outdoors, depended on what he or she had completed in the first session. For participants assigned to the appearance-compliment condition (but not the control/no compliment condition), the feedback also included the sentence, “I can see from your picture that your look is very presentable, and looking good is an advantage in the employment market.” The compliment was intentionally mildly worded, in order to seem natural within the given context and not to raise suspicions regarding the study’s real purpose.

After reading the feedback, participants completed the manipulation check, a measure of their mood (using the PANAS; Watson et al., 1988), and the difficult math test. Upon completion, participants provided their demographic information including height and weight—participants’ BMI did not differ across the two experimental conditions, $t(146) = 1.20$, $p = .232$. Due to our concern that they might talk among themselves—specifically, a participant who completed the study could tell her peer students who were about to participate that it was actually not about vocational psychology—we did not want participants to know what the real purpose of the research was until the entire study had been conducted. Hence, we debriefed the participants only after completion of the whole study by sending them an e-mail describing its true purpose and offering to answer further questions.

Results and Discussion

Manipulation Check

A regression analysis with the vocational counselor’s evaluation of participants’ physical appearance as the dependent

Table 3. Means and Standard Deviations for Trait Self-Objectification, Manipulation Check, Mood, and Math Performance by Gender and Experimental Condition (Study 2).

Variables	Appearance Compliment			Control		
	Women, <i>M</i> (<i>SD</i>)	Men, <i>M</i> (<i>SD</i>)	Total, <i>M</i> (<i>SD</i>)	Women, <i>M</i> (<i>SD</i>)	Men, <i>M</i> (<i>SD</i>)	Total, <i>M</i> (<i>SD</i>)
Trait self-objectification (TSO)	3.67 (14.15)	−2.48 (11.35)	0.56 (14.00)	1.76 (13.01)	−6.60 (13.42)	−2.48 (13.78)
Manipulation check—appearance	6.72 (0.51)	6.27 (0.72)	6.49 (0.66)	4.50 (0.86)	4.46 (0.95)	4.48 (0.90)
Manipulation check—cognitive skills	5.49 (1.25)	5.03 (1.10)	5.25 (1.19)	5.09 (1.03)	4.97 (1.27)	5.03 (1.15)
Manipulation check—social skills	5.15 (1.35)	5.02 (1.21)	5.09 (1.27)	4.94 (1.04)	5.06 (1.19)	5.00 (1.11)
Mood	4.04 (0.44)	3.90 (0.39)	3.97 (0.42)	3.89 (0.52)	3.99 (0.49)	3.94 (0.50)
Math performance	10.90 (3.09)	11.70 (2.39)	11.30 (2.77)	12.50 (3.03)	11.97 (2.77)	12.23 (2.89)

Note. *N* = 148 women and men participants. The difference in pre-existing TSO levels between the two conditions was non-significant, $F(1, 146) = 1.88$, $p = .172$.

Table 4. Results of Regression Analysis on Mood (Study 2).

Predictors	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>sr</i>	ΔF	R^2	ΔR^2
Block I									
Intercept	3.88	.08		50.39	.00				
Appearance compliment (vs. control)	0.15	.11	.17	1.46	.146	.12			
Gender	0.08	.11	.09	0.77	.442	.06			
Trait self-objectification (TSO)	−0.17	.08	−.36	−2.07	.041	−.17			
							0.18	.00	.00
Block II									
Gender × TSO	0.05	.11	.08	0.45	.652	.04			
TSO × Condition	0.28	.11	.43	2.59	.011	.21			
Gender × Condition	−0.23	.15	−.23	−1.55	.123	−.13			
							4.36	.09	.09**
Block III									
TSO × Condition × Gender	−0.07	.16	−.07	−0.43	.671	−.04			
							0.18	.09	.00

Note. *N* = 148 women and men participants. Model summary Block I: $R = .06$, $R^2_{adj} = -.02$, $F(3, 144) = 0.18$, $p = .911$. Model summary Block II: $R = .30$, $R^2_{adj} = .05$, $F(6, 141) = 2.27$, $p = .040$. Model summary Block III: $R = .30$, $R^2_{adj} = .04$, $F(7, 140) = 1.96$, $p = .064$. *sr* = semipartial coefficients. ** $p = .006$.

variable and the condition, gender, and their two-way interaction as predictors was significant, $R^2 = .64$, $F(3, 144) = 86.63$, $p < .001$. As intended, participants in the appearance-compliment condition rated the vocational counselor's evaluation of their physical appearance as more positive than participants in the control condition, $\beta = .871$, $t(144) = 12.30$, $p < .001$. The effects of gender and the Gender × Condition interaction were non-significant, $\beta_s < |.14|$, $ps > .116$, suggesting that men and women understood the manipulation in a similar way.

Participants' perceptions of the vocational counselor's evaluations of their cognitive and social skills did not differ across conditions. For cognitive skills, the regression model failed to reach significance, $R^2 = .03$, $F(3, 144) = 1.54$, $p = .207$. Neither the main effects nor the interaction was significant, $\beta_s < |.17|$, $ps > .148$. For social skills, again, the regression model failed to reach significance, $R^2 = .01$, $F(3, 144) = 0.19$, $p = .900$, and neither the main effects nor the interaction was significant, $\beta_s < |.09|$, $ps > .454$. Thus, the experimental manipulation was successful, exerting

influence on men and women alike for the physical appearance dimension, without evidence of influence on the filler, irrelevant dimensions.

Main Analyses

Table 3 shows means and *SDs* for all measured variables. Our research hypotheses regarding the effect of appearance compliments on participants' mood and math performance were tested using two regression analyses. The predictors in the first regression model (see Table 4) were the experimental condition (dummy coded), participant's gender (dummy coded such that woman was the reference category), TSO (standardized), and their two- and three-way interactions. Because the main purpose of standardization is to render zero a more meaningful value (i.e., average), we did not standardize TSO scores across the whole sample, which would result in most women having positive TSO scores and most men having negative TSO scores. Rather, we conducted separate standardization for

Table 5. Results of Regression Analysis on Math Performance (Study 2).

Predictors	B	SE	β	t	p	sr	ΔF	R ²	ΔR^2
Block I									
Intercept	-3.98	3.52		-1.13	.261				
Psychometric score	0.02	0.01	.37	4.73	.000	.36			
Appearance compliment (vs. control)	-1.51	0.62	-.27	-2.44	.016	-.19			
Gender	-0.99	0.65	-.18	-1.54	.126	-.12			
Trait self-objectification (TSO)	0.76	0.49	.26	1.57	.118	.12	7.66	.18	.18**
Block II									
Gender \times TSO	-0.72	0.65	-.17	-1.10	.273	-.08			
TSO \times Condition	0.03	0.64	.01	0.04	.968	.00			
Gender \times Condition	1.40	0.87	.22	1.61	.111	.12	1.52	.20	.02
Block III									
TSO \times Condition \times Gender	0.03	0.91	.00	0.03	.976	.00	0.00	.20	.00

Note. $N = 148$ women and men participants. Model summary Block I: $R = .42$, $R^2_{adj} = .15$, $F(4, 143) = 7.66$, $p < .001$. Model summary Block II: $R = .45$, $R^2_{adj} = .16$, $F(7, 140) = 5.07$, $p < .001$. Model summary Block III: $R = .45$, $R^2_{adj} = .16$, $F(8, 139) = 4.41$, $p < .001$. $sr =$ semipartial coefficients. ** $p < .001$.

women and men, such that participants' standardized TSO scores reflected their level of self-objectification relative to their own gender group.

The second regression model (see Table 5) was similar to the first one, except that we included participants' scores on the Israeli Psychometric Test (the Israeli equivalent to the SAT), which was added as a covariate to control for pre-existing differences in math knowledge; on average, the percentage of men high-school students in Israel who major in math is larger than that of women (Ayalon, 2003). In both regression models, the first order effects were entered in the first block, the two-way interactions were entered in the second block, and the three-way interaction was entered in the third block.

Mood and Math Performance

As Table 4 shows, the effect of TSO on mood was significant, and it was qualified by a significant interaction with the experimental condition. Interpreting this interaction revealed that receiving an appearance compliment did not affect participants scoring low on TSO (i.e., 1 SD under average), $B = -0.13$ ($SE = .15$), $p = .403$, but it significantly improved the mood of participants with high TSO (i.e., 1 SD above average), $B = 0.44$ ($SE = .15$), $p = .005$. Figure 2 illustrates the obtained pattern of results.

As Table 5 shows, receiving appearance compliments significantly worsened participants' math scores. Except for participants' Psychometric Test score, which significantly predicted a better math score, none of the other effects or interactions reached significance. Thus, the interaction between condition and TSO, observed in Study 1, failed to replicate.

In summary, receiving appearance compliments improved mood in women and men participants with high TSO. At the same time, however, appearance compliments impaired participants' math performance (regardless of their gender and



Figure 2. Mood among women and men participants with high (+1 SD) and low (-1 SD) trait self-objectification in the control/no compliment and appearance-compliment conditions (Study 2).

level of TSO). These findings are perhaps surprising in light of the vast body of research showing that positive mood is associated with improved, rather than impaired, cognitive performance (Ashby, Isen, & Turken, 1999; Isen, 1999, 2001; Thompson, Schellenberg, & Husain, 2001). Yet our findings are consistent with theorizing about the deceiving nature (i.e., seemingly positive but potentially harmful) of appearance compliments (Calogero et al., 2009).

General Discussion

Two studies, using different experimental manipulations—recall of a past situation in which one had received an appearance compliment and receiving an appearance compliment

from a vocational counselor in the “here and now”—revealed that appearance compliments undermined women’s math performance. In Study 1, this negative effect was observed among women with high TSO, whereas in Study 2 the effect was general and did not depend on participants’ TSO. In Study 2, we also found that appearance compliments led to improved mood in participants scoring high on TSO and that the impairment in math performance following an appearance compliment generalized to men as well. Given the relatively few experimental studies on the effects on men of exposure to a “female gaze”, this is an important contribution of the present research.

Nevertheless, the implications of the results obtained for men should be interpreted cautiously. In Study 2, we did not find a gender by condition interaction. In line with Hebl and colleagues’ (2004) findings, the impairment in performance following a situation that induced appearance-related thoughts was not unique to women. However, although we equalized their conditions in the lab, men’s and women’s experiences outside of the lab are not equal, as women are much more likely to receive appearance compliments than men (e.g., Parisi & Wogan, 2006). Hence, the real-life cognitive impairment observed in our research might occur much more frequently among women than among men, potentially culminating in substantial performance deficits.

Caution is also needed when interpreting our findings on mood improvement among participants with high TSO. We focused on this particular affective outcome because we wanted to unravel the ironic “positive mood, negative performance” effect. Previous researchers who have focused on the full-blown affective response to appearance compliments have shown that it is often somewhat ambivalent, comprising both positive and negative emotions. For example, Tiggemann and Boundy’s (2008) experimental study found that, in addition to the decrease in negative feelings such as distress, women who were higher on TSO experienced heightened body shame following an appearance compliment. Correlational studies with adult (Calogero et al., 2009; Herbozo, Stevens, Moldovan, & Morrell, 2017) and adolescent (Slater & Tiggemann, 2015) women also revealed that appearance compliments are associated with negative affective outcomes, such as increased body dissatisfaction. Among men, appearance compliments were associated with less body dissatisfaction but also with a higher drive to muscularity (the wish to improve one’s looks by becoming more muscular; Nowell & Ricciardelli, 2008; Schuster et al., 2013). Thus, despite the uplifting mood effect, the comprehensive affective and motivational response to appearance compliments may be of a more ambivalent nature.

Limitations and Future Directions

The main limitation of the present research is that we did not identify the exact psychological mechanism responsible for the observed decrements in cognitive performance. Based on

previous studies (e.g., Fredrickson et al., 1998; Hebl et al., 2004), we believe that the impairment of participants’ math performance might reflect an experience of state self-objectification—a form of self-consciousness characterized by a temporary increase in the monitoring of one’s appearance (Fredrickson et al., 1998). According to objectification theory (Fredrickson & Roberts, 1997), this self-consciousness interrupts the experience of “flow,” namely, complete immersion in a demanding mental or physical task (Csikszentmihalyi, 1990), which leads to impaired cognitive performance (Guizzo & Cadinu, 2016). Including a direct measure of state self-objectification, such as Breines, Crocker, and Garcia’s (2008) situational appearance-surveillance scale (see our pilot study to Study 1), may throw light on the mechanism. But, as explained above, we chose not to use such direct measures, so as not to reveal the real purpose of the studies.

In the absence of a direct measure of state self-objectification, a potential alternative mechanism through which appearance compliments possibly exerted their negative effects on math performance might be women participants’ experience of stereotype threat. That is, they might have been concerned about the possibility of confirming the negative stereotype about their gender’s inferior math ability (Steele, 1997). Accumulating evidence shows that stereotype threat systematically undermines women’s math performance (for a meta-analysis, see Walton & Spencer, 2009). It is possible that receiving an appearance compliment reminded women participants of their gender identity and the stigma associated with it, resulting in increased stereotype threat. This threat—rather than the diversion of cognitive resources to their physical appearance (Fredrickson et al., 1998)—possibly led to impaired math performance.

We believe, however, that stereotype threat is a less parsimonious explanation than the experience of state self-objectification because it cannot account for the performance deficit observed among men (who are not subjected to stereotype threat when taking math tests). Also, stereotype threat effects are known to be moderated by variables such as math identification (Keller, 2007), or stigma consciousness (Pinel, 1999), but not by TSO (see Schmader, Johns, & Forbes, 2008). Nevertheless, we acknowledge that the two explanations are not mutually exclusive: It could be the case that both women and men participants experienced performance deficits in the appearance-compliment condition because their cognitive resources were diverted to their physical appearance, but women participants in addition experienced decrements due to stereotype threat.

Future research should disentangle the two mechanisms and their role in impairing cognitive performance. Even though clear identification of the mechanism awaits future research, demonstrating that appearance compliments impair cognitive performance is of great importance in itself. Women’s success in cognitively demanding environments (such as in math-related fields, in which women are underrepresented; e.g., Joy, 2000; Staniec, 2004) is critical for the

achievement of gender equality (Xu, 2013). Hence, it is important to identify potential psychological barriers that might block women's success in such environments.

Another limitation of the present research is that it focused only on non-intimate relationships. In future studies, it may be intriguing to examine the effects of appearance compliments in intimate relationships. On the one hand, Carriere and Kluck (2014) found that within heterosexual romantic relationships, receiving positive comments about their weight and appearance from their partner predicted women's greater relationship satisfaction. On the other hand, it is possible that giving many appearance compliments to their women partners is associated with men's endorsement of benevolent sexism (Glick & Fiske, 2001)—that is, the admiration and idealization of women who live up to their traditional gender role (in this case, as “the fairer sex”). If so, appearance compliments within heterosexual relationships might be associated with men's behaving in ways that undermine their partners' sense of competence (e.g., provision of dependency-oriented support; Hammond & Overall, 2015).

A third limitation of our study is that all the measures that we used were originally developed in English, using U.S. samples. However, the constructs assessed by these measures may be culture-specific or, at the very least, culturally variant—potentially leading to bias in measurement; items conveying the same literal meaning may in fact carry different connotative meaning (Van de Vijver & Tanzer, 1997). For example, women's tendency to objectify themselves may be influenced by the extent to which their culture encourages social comparisons (see Gervais, Bernard, & Riemer, 2015) and has been shown to be differentially associated with body shame versus body monitoring in different cultures (Wollast, Klein, & Bernard, 2017). More research among Israeli participants is required to develop culturally equivalent measures of the constructs used in our study. Finally, in this study, we examined only the immediate effects of appearance compliments on math performance. Future research should examine the duration of this effect and whether it generalizes across contexts. For example, it may be interesting to explore whether receiving an appearance compliment from a vocational counselor in a counseling setting translates into impaired performance in another setting, such as a test administered as part of a job selection battery. Researchers should also examine the generalizability of our findings to other cognitively demanding tasks—which could also shed light on the question of the mechanism. In particular, exploring whether appearance compliments impair performance in non-stigmatized tasks (e.g., verbal tests) would support diversion of attention, rather than stereotype threat, as the cause of performance decrements.

Practice Implications

Our results demonstrate that receiving compliments on one's looks leads to short-term performance deficits. This

performance is critical for successes in cognitively demanding environments such as schools, academia, and workplaces. However, our findings also show that appearance compliments can feel good. Indeed, they are sometimes actively sought by women and girls, who learn from an early age that they are evaluated by their appearance (McKinley, 1999). As one school teacher puts it, “They pull you in. The little girls come up to you with their frilly dresses and hair ribbons and jewelry. ‘Look what I have,’ they say and wait for you to respond” (Sadker & Sadker, 2010, p. 56).

In this way, appearance compliments are substantially different from sexual harassment, which is experienced by women as offensive (Street, Gradus, Stafford, & Kelly, 2007) and has been shown to be driven by men's wish to put “uppity women” (Berdahl, 2007, p. 425), namely, women who exhibit assertiveness and independence, in their place. Therefore, in our view, battling appearance compliments, as opposed to sexual harassments, should be done not through legislation but through raising awareness of their potential negative consequences in cognitively demanding environments. The public—teachers and professors, bosses and co-workers, and so forth—should realize that, in line with the feminist saying that “the personal is political” (Hanisch, 1970), when mundane interpersonal interactions between men and women become aggregated, they have the power to reproduce traditional gender roles. Thus, seemingly trivial and possibly well-intentioned appearance compliments might undermine women's achievements.

Conclusions

In her landmark book, *The Velvet Glove* (1994), sociologist Mary Jackman argues that gender inequality is often perpetuated through “sweet persuasion” (p. 2) rather than overt oppression. In line with this, social psychology research on sexism suggests that whereas manifestations of hostile sexism (i.e., overt misogyny) raise women's resistance, manifestations of benevolent (i.e., chivalrous and seemingly kind) sexism often make women behave in ways that perpetuate patriarchal arrangements (Becker & Wright, 2011). To illustrate, exposure to benevolent sexism (but not to hostile sexism) increased women's appearance surveillance and their plans to engage in appearance-management activities (Calogero & Jost, 2011) and impaired their cognitive performance (Dardenne et al., 2007). The present research demonstrates that appearance compliments operate in a similar manner: They are not overtly unpleasant to women. In fact, many women endorse them with enthusiasm (Bartky, 2002). Yet, feminist commentators have observed that, in the broad societal context, appearance compliments subtly reinforce women's traditional role as sex objects whose appearance is constantly policed (Wolf, 1991). Our findings further show that appearance compliments have immediate detrimental effects on individual women's performance. We hope that raising awareness of these adverse consequences will

contribute to the removal of one of the many barriers to gender equality.

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ORCID iD

Rotem Kahalon  <http://orcid.org/0000-0002-4718-6119>

References

- Ashby, F. G., Isen, A. M., & Turken, A. U. (1999). A neuropsychological theory of positive affect and its influence on cognition. *Psychological Review, 106*, 529–550. doi:10.1037/0033-295X.106.3.529
- Aubrey, J. S. (2006). Exposure to sexually objectifying media and body self-perceptions among college women: An examination of the selective exposure hypothesis and the role of moderating variables. *Sex Roles, 55*, 159–172. doi:10.1007/s11199-006-9070-7
- Ayalon, H. (2003). Women and men go to university: Mathematical background and gender differences in choice of field in higher education. *Sex Roles, 48*, 277–290. doi:10.1023/A:1022829522556
- Bartky, S. L. (1990). *Femininity and domination: Studies in the phenomenology of oppression*. New York, NY: Routledge.
- Bartky, S. L. (2002). *Sympathy and solidarity and other essays*. Lanham, MD: Rowman & Littlefield.
- Becker, J. C., & Wright, S. C. (2011). Yet another dark side of chivalry: Benevolent sexism undermines and hostile sexism motivates collective action for social change. *Journal of Personality and Social Psychology, 101*, 62–77. doi:10.1037/a0022615
- Ben-Zur, H. (2002). Coping, affect and aging: The roles of mastery and self-esteem. *Personality and Individual Differences, 32*, 357–372. doi:10.1016/S0191-8869(01)00031-9
- Berdahl, J. L. (2007). The sexual harassment of uppity women. *Journal of Applied Psychology, 92*, 425–437. doi:10.1037/0021-9010.92.2.425
- Breines, J. G., Crocker, J., & Garcia, J. A. (2008). Self-objectification and well-being in women's daily lives. *Personality and Social Psychology Bulletin, 34*, 583–598. doi:10.1177/0146167207313727
- Buss, D. M., & Shackelford, T. K. (2008). Attractive women want it all: Good genes, economic investment, parenting proclivities, and emotional commitment. *Evolutionary Psychology, 6*, 134–146. doi:10.1177/147470490800600116
- Calogero, R. M. (2004). A test of objectification theory: The effect of the male gaze on appearance concerns in college women. *Psychology of Women Quarterly, 28*, 16–21. doi:10.1111/j.1471-6402.2004.00118.x
- Calogero, R. M. (2011). Operationalizing self-objectification: Assessment and related methodological issues. In R. M. Calogero, S. Tantleff-Dunn, & J. K. Thompson (Eds.), *Self-objectification in women: Causes, consequences, and counteractions* (pp. 23–49). Washington, DC: American Psychological Association.
- Calogero, R. M. (2013). Objects don't object: Evidence that self-objectification disrupts women's social activism. *Psychological Science, 24*, 312–318. doi:10.1177/0956797612452574
- Calogero, R. M., Herbozo, S., & Thompson, J. K. (2009). Complimentary weightism: The potential costs of appearance-related commentary for women's self-objectification. *Psychology of Women Quarterly, 33*, 120–132. doi:10.1111/j.1471-6402.2008.01479.x
- Calogero, R. M., & Jost, J. T. (2011). Self-subjugation among women: Exposure to sexist ideology, self-objectification, and the protective function of the need to avoid closure. *Journal of Personality and Social Psychology, 100*, 211–228. doi:10.1037/a0021864
- Carriere, L. J., & Kluck, A. S. (2014). Appearance commentary from romantic partners: Evaluation of an adapted measure. *Body Image, 11*, 137–145. doi:10.1016/j.bodyim.2013.12.003
- Cejka, M. A., & Eagly, A. H. (1999). Gender-stereotypic images of occupations correspond to the sex segregation of employment. *Personality and Social Psychology Bulletin, 25*, 413–423. doi:10.1177/0146167299025004002
- Cook, R. D. (1977). Detection of influential observation in linear regression. *Technometrics, 19*, 15–18. doi:10.1080/00401706.1977.10489493
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal performance*. New York, NY: Harper and Row.
- Dardenne, B., Dumont, M., & Bollier, T. (2007). Insidious dangers of benevolent sexism: Consequences for women's performance. *Journal of Personality and Social Psychology, 93*, 764–779. doi:10.1037/0022-3514.93.5.764
- Eckert, P., & McConnell-Ginet, S. (2003). *Language and gender*. Cambridge, England: Cambridge University Press. doi:10.1017/CBO9780511791147
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*, 1149–1160. doi:10.3758/BRM.41.4.1149
- Fea, C. J., & Brannon, L. A. (2006). Self-objectification and compliment type: Effects on negative mood. *Body Image, 3*, 183–188. doi:10.1016/j.bodyim.2006.01.005
- Fredrickson, B. L., & Roberts, T. (1997). Objectification theory. *Psychology of Women Quarterly, 21*, 173–206. doi:10.1111/j.1471-6402.1997.tb00108.x
- Fredrickson, B. L., Roberts, T., Noll, S. M., Quinn, D. M., & Twenge, J. M. (1998). That swimsuit becomes you: Sex differences in self-objectification, restrained eating, and math performance. *Journal of Personality and Social Psychology, 75*, 269–284. doi:10.1037/0022-3514.75.1.269
- Gay, R. K., & Castano, E. (2010). My body or my mind: The impact of state and trait objectification on women's cognitive resources.

- European Journal of Social Psychology*, 40, 695–703. doi:10.1002/ejsp.731
- Gervais, S., Bernard, P., & Riemer, A. (2015). Who treats people as sex objects? Cultural orientation, social comparison, and sexual objectification perpetration. *Revue internationale de psychologie sociale*, 28, 153–181. Retrieved from <https://www.cairn.info/revue-internationale-de-psychologie-sociale-2015-1-page-153.htm>
- Gervais, S. J., Vescio, T. K., & Allen, J. (2011). When what you see is what you get: The consequences of the objectifying gaze for women and men. *Psychology of Women Quarterly*, 35, 5–17. doi:10.1177/0361684310386121
- Glick, P., & Fiske, S. T. (2001). An ambivalent alliance: Hostile and benevolent sexism as complementary justifications for gender inequality. *American Psychologist*, 56, 109–118. doi:10.1037/0003-066X.56.2.109
- Graham, F. K., & Clifton, R. K. (1966). Heart-rate change as a component of the orienting response. *Psychological Bulletin*, 65, 305–320. doi:10.1037/h0023258
- Green, M. A., Ohrt, T. K., Nguyen, C., Blasko, K., Khatiwada, S., Martin, A., . . . Marie, C. (2014). Heart rate and affective reactions to state self-objectification as a function of gender. *Basic and Applied Social Psychology*, 36, 259–271. doi:10.1080/01973533.2014.900620
- Guizzo, F., & Cadinu, M. (2016). Effects of objectifying gaze on female cognitive performance: The role of flow experience and internalization of beauty ideals. *British Journal of Social Psychology*, 56, 281–292. doi:10.1111/bjso.12170
- Hakim, C. (2010). Erotic capital. *European Sociological Review*, 26, 499–518. doi:10.1093/esr/jcq014
- Hammond, M. D., & Overall, N. C. (2015). Benevolent sexism and support of romantic partner's goals undermining women's competence while fulfilling men's intimacy needs. *Personality and Social Psychology Bulletin*, 41, 1180–1194. doi:10.1177/0146167215593492
- Hanisch, C. (1970). The personal is political. In S. Firestone & A. Koedt (Eds.), *Notes from the second year: Women's liberation* (pp. 77–86). New York, NY: Radical Feminism.
- Hebl, M. R., King, E. B., & Lin, J. (2004). The swimsuit becomes us all: Ethnicity, gender, and vulnerability to self-objectification. *Personality and Social Psychology Bulletin*, 30, 1322–1331. doi:10.1177/0146167204264052
- Heckman, J. J., Ichimura, H., Smith, J., & Todd, P. (1996). Sources of selection bias in evaluating social programs: An interpretation of conventional measures and evidence on the effectiveness of matching as a program evaluation method. *Proceedings of the National Academy of Sciences*, 93, 13416–13420.
- Herbozo, S., Stevens, S. D., Moldovan, C. P., & Morrell, H. E. (2017). Positive comments, negative outcomes? The potential downsides of appearance-related commentary in ethnically diverse women. *Body Image*, 21, 6–14. doi:10.1016/j.bodyim.2017.01.008
- Isen, A. M. (1999). Positive affect. In T. Dalglish & M. Power (Eds.), *The handbook of cognition and emotion* (pp. 521–539). New York, NY: Wiley. doi:10.1002/0470013494.ch25
- Isen, A. M. (2001). An influence of positive affect on decision making in complex situations: Theoretical issues with practical implications. *Journal of Consumer Psychology*, 11, 75–85. doi:10.1207/S15327663JCP110201
- Jackman, M. R. (1994). *The velvet glove: Paternalism and conflict in gender, class, and race relations*. Berkeley: University of California Press.
- Joy, L. (2000). Do colleges shortchange women? Gender differences in the transition from college to work. *American Economic Review*, 90, 471–475. doi:10.1257/aer.90.2.471
- Keller, J. (2007). Stereotype threat in classroom settings: The interactive effect of domain identification, task difficulty and stereotype threat on female students' math performance. *British Journal of Educational Psychology*, 77, 323–338. doi:10.1348/000709906X113662
- Koudenburg, N., & Gordijn, E. H. (2011). “My date can call me sweet, but my colleague can't”: Meta-stereotypic behavioral intentions as a function of context and liking of the outgroup. *Social Cognition*, 29, 221–230. doi:10.1521/soco.2011.29.2.221
- Kwan, S., & Trautner, M. N. (2009). Beauty work: Individual and institutional rewards, the reproduction of gender, and questions of agency. *Sociology Compass*, 3, 49–71. doi:10.1111/j.1751-9020.2008.00179.x
- Lindner, D., & Tantleff-Dunn, S. (2017). The development and psychometric evaluation of the Self-Objectification Beliefs and Behaviors Scale. *Psychology of Women Quarterly*, 41, 254–272. doi:10.1177/0361684317692109
- Liss, M., Erchull, M. J., & Ramsey, L. R. (2011). Empowering or oppressing? Development and exploration of the Enjoyment of Sexualization Scale. *Personality and Social Psychology Bulletin*, 37, 55–68. doi:10.1177/0146167210386119
- Loughnan, S., Baldissarri, C., Spaccatini, F., & Elder, L. (2017). Internalizing objectification: Objectified individuals see themselves as less warm, competent, moral, and human. *British Journal of Social Psychology*, 56, 217–232. doi:10.1111/bjso.12188
- Mackinnon, A., Jorm, A. F., Christensen, H., Korten, A. E., Jacomb, P. A., & Rodgers, B. (1999). A short form of the Positive and Negative Affect Schedule: Evaluation of factorial validity and invariance across demographic variables in a community sample. *Personality and Individual Differences*, 27, 405–416. doi:10.1016/S0191-8869(98)00251-7
- McKinley, N. M. (1999). Women and objectified body consciousness: Mothers' and daughters' body experience in cultural, developmental, and familial context. *Developmental Psychology*, 35, 760–769. doi:10.1037//0012-1649.35.3.760
- McKinley, N. M. (2011). Continuity and change in self-objectification: Taking a life-span approach to women's experiences of objectified body consciousness. In R. M. Calogero, S. Tantleff-Dunn, & J. K. Thompson (Eds.), *Self-objectification in women: Causes, consequences, and counteractions* (pp. 101–115). Washington, DC: American Psychological Association.
- McKinley, N. M., & Hyde, J. S. (1996). The objectified body consciousness scale: Development and validation. *Psychology of Women Quarterly*, 20, 181–215. doi:10.1111/j.1471-6402.1996.tb00467.x

- Mercurio, A. E., & Landry, L. J. (2008). Self-objectification and well-being: The impact of self-objectification on women's overall sense of self-worth and life satisfaction. *Sex Roles, 58*, 458–466. doi:10.1007/s11199-007-9357-3
- Moffitt, L. B., & Szymanski, D. M. (2011). Experiencing sexually objectifying environments: A qualitative study. *The Counseling Psychologist, 39*, 67–106. doi:10.1177/0011000010364551
- Moradi, B., & Huang, Y. (2008). Objectification theory and psychology of women: A decade of advances and future directions. *Psychology of Women Quarterly, 32*, 377–398. doi:10.1111/j.1471-6402.2008.00452.x
- Noll, S. M., & Fredrickson, B. L. (1998). A mediational model linking self-objectification, body shame, and disordered eating. *Psychology of Women Quarterly, 22*, 623–636. doi:10.1111/j.1471-6402.1998.tb00181.x
- Nowell, C., & Ricciardelli, L. A. (2008). Appearance-based comments, body dissatisfaction and drive for muscularity in males. *Body Image, 5*, 337–345. doi:10.1016/j.bodyim.2008.06.002
- Parisi, C., & Wogan, P. (2006). Compliment topics and gender. *Women and Language, 29*, 21–29.
- Pinel, E. C. (1999). Stigma consciousness: The psychological legacy of social stereotypes. *Journal of Personality and Social Psychology, 76*, 114–128. doi:10.1037/0022-3514.76.1.114
- Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interactions in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of Educational and Behavioral Statistics, 31*, 437–448. doi:10.3102/10769986031004437
- Quinn, B. A. (2002). Sexual harassment and masculinity: The power and meaning of “girl watching.” *Gender & Society, 16*, 386–402. doi:10.1177/0891243202016003007
- Quinn, D. M., Chaudoir, S. R., & Kallen, R. W. (2011). Performance and flow: A review and integration of self-objectification research. In R. M. Calogero, S. Tantleff-Dunn, & J. K. Thompson (Eds.), *Self-objectification in women: Causes, consequences, and counteractions* (pp. 119–138). Washington, DC: American Psychological Association.
- Quinn, D. M., Kallen, R. W., Twenge, J. M., & Fredrickson, B. L. (2006). The disruptive effect of self-objectification on performance. *Psychology of Women Quarterly, 30*, 59–64. doi:10.1111/j.1471-6402.2006.00262.x
- Rhode, D. L. (2010). *The beauty bias: The injustice of appearance in life and law*. New York, NY: Oxford University Press.
- Sadker, M., & Sadker, D. (2010). *Failing at fairness: How America's schools cheat girls*. New York, NY: Simon and Schuster.
- Schmader, T., Johns, M., & Forbes, C. (2008). An integrated process model of stereotype threat effects on performance. *Psychological Review, 115*, 336–356. doi:10.1037/0033-295X.115.2.336
- Schuster, E., Negy, C., & Tantleff-Dunn, S. (2013). The effects of appearance-related commentary on body dissatisfaction, eating pathology, and body change behaviors in men. *Psychology of Men & Masculinity, 14*, 76–87. doi:10.1037/a0025625
- Shnabel, N., Purdie-Vaughns, V., Cook, J. E., Garcia, J., & Cohen, G. L. (2013). Demystifying values-affirmation interventions: Writing about social belonging is a key to buffering against identity threat. *Personality and Social Psychology Bulletin, 39*, 663–676. doi:10.1177/0146167213480816
- Slater, A., & Tiggemann, M. (2015). Media exposure, extracurricular activities, and appearance-related comments as predictors of female adolescents' self-objectification. *Psychology of Women Quarterly, 39*, 375–389. doi:10.1177/0361684314554606
- Staniec, J. F. O. (2004). The effects of race, sex, and expected returns on the choice of college major. *Eastern Economic Journal, 30*, 549–562.
- Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist, 52*, 613–629. doi:10.1037/0003-066X.52.6.613
- Street, A. E., Gradus, J. L., Stafford, J., & Kelly, K. (2007). Gender differences in experiences of sexual harassment: Data from a male-dominated environment. *Journal of Consulting and Clinical Psychology, 75*, 464–474. doi:10.1037/0022-006X.75.3.464
- Swim, J. K., Hyers, L. L., Cohen, L. L., & Ferguson, M. J. (2001). Everyday sexism: Evidence for its incidence, nature, and psychological impact from three daily diary studies. *Journal of Social Issues, 57*, 31–53. doi:10.1111/0022-4537.00200
- Thompson, W. F., Schellenberg, E. G., & Husain, G. (2001). Arousal, mood, and the Mozart effect. *Psychological Science, 12*, 248–251. doi:10.1111/1467-9280.00345
- Tiggemann, M., & Boundy, M. (2008). Effect of environment and appearance compliment on college women's self-objectification, mood, body shame, and cognitive performance. *Psychology of Women Quarterly, 32*, 399–405. doi:10.1111/j.1471-6402.2008.00453.x
- Van de Vijver, F. J. R., & Tanzer, N. K. (1997). Bias and equivalence in cross-cultural assessment: An overview. *European Review of Applied Psychology, 47*, 263–280. doi:10.1016/j.erap.2003.12.004
- Vescio, T. K., Gervais, S. J., Snyder, M., & Hoover, A. (2005). Power and the creation of patronizing environments: The stereotype-based behaviors of the powerful and their effects on female performance in masculine domains. *Journal of Personality and Social Psychology, 88*, 658–672. doi:10.1037/0022-3514.88.4.658
- Walton, G. M., & Spencer, S. J. (2009). Latent ability grades and test scores systematically underestimate the intellectual ability of negatively stereotyped students. *Psychological Science, 20*, 1132–1139. doi:10.1111/j.1467-9280.2009.02417.x
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070. doi:10.1037/0022-3514.54.6.1063
- Wolf, N. (1991). *The beauty myth: How images of beauty are used against women*. New York, NY: William Morrow.
- Wollast, R., Klein, O., & Bernard, P. (2017, July). *Do sexism and sensitivity to inequality explain cultural differences in self-objectification?* Paper presented at the 18th General Meeting of the European Association of Social Psychology, Granada, Spain.
- Xu, Y. J. (2013). Career outcomes of STEM and non-STEM college graduates: Persistence in majored-field and influential factors in career choices. *Research in Higher Education, 54*, 349–382. doi:10.1007/s11162-012-9275-2