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Theoretical Background

Attractiveness Stereotypes

Physical attractiveness has been a great inspiration for art and literature, as well as a point of great interest for science. Stereotyping based on physical appearance or, more specifically, cognitive biases caused by one’s appearance and leading to the attribution of personal characteristics towards that person, have played an important role in the psychology research. Thorndike (1920) addressed this phenomenon within the scope of the Halo Effect, wherein an observed characteristic of a person influences the observer’s evaluation of the subject’s other characteristics. For example, one might assume that a smartly person is trustworthy, and that a person who is untidily dressed is not trustworthy.

In line with this argumentation, but focusing only on the positives, the “what is beautiful is good” stereotype (Dion, Berscheid & Walster, 1972) is possibly the most well-known bias when it comes to appearance-specific attributions. In their study, Dion et al. (1972) reported that the participants attributed more positive characteristics to the targets in the photo that they found attractive than the ones they did not find attractive. These results were supported in a number of meta-analyses (Eagly, Ashmore, Makhijani, & Longo, 1991; Jackson, Hunter, & Hudge, 1995; Langlois et al., 2000). The latter study concluded that “in addition to being judged differently as a function of their attractiveness, attractive individuals on average were treated significantly better than unattractive individuals” (p. 401). This indicates that the “what is beautiful is good” stereotype exists to the extent of positive discrimination. These results were supported in an employment context, in the meta-analytic review of Hosoda, Stone-Romero and Coats (2003), where they report a bias, favoring attractive individuals on job-related outcomes.
There is, however, evidence to suggest that attractive individuals are not perceived more positively for all other characteristics. In his review, Feingold (1992) concluded that while attractive individuals were rated more favorably in some social characteristics, they were not perceived to be more intelligent or competent than less attractive individuals. Abel, Croysdale, & Styles (2009) suggested that there were gender differences on the attractiveness bias regarding the promotion likelihood; attractive female targets were rated as being more likely to be a manager than unattractive ones, whereas unattractive male targets were rated to be more likely to be a manager than the attractive male targets. In a study about the effect of attractiveness on evaluation and selection decisions in an organizational context, Agthe, Spörrle, & Maner (2010), found that the attractive targets were only then more positively evaluated than the less attractive targets, when they were of the opposite sex. They also found that while the participants favored attractive opposite-sex targets, they discriminated against the attractive same-sex targets, compared to the less attractive same-sex targets.

**Sexual Attribution Bias**

Sexual attribution bias (SAB) is a rather recently discovered cognitive bias, according to which, young and heterosexual adults show a derogative attribution towards the achievement stories of attractive, young adults of the same sex; whereas a glorifying attribution is demonstrated, when the achievement story is related to an attractive member of the opposite sex (Agthe & Spörrle, 2009; Agthe, Spörrle, & Försterling, 2008; Försterling, Preikschas, & Agthe, 2007). The derogation manifests itself by the participant attributing an achievement scenario of a highly attractive same-sex person (rivalry situation) to luck rather than ability; and the glorification manifests itself by the participant attributing an achievement scenario of a highly attractive opposite-sex person (mating situation) to ability, rather than luck.
Evolutionary psychology research has shown that adaptive intentions, especially towards survival or mating, can influence the perception of, or attributions towards others, which also contributes to the forming of a biased perception towards these persons (Ackerman et al., 2006; Maner et al., 2005). The glorification component of the SAB can thus be regarded as the “what is beautiful is good” stereotype with a gender interaction twist. According to this, praising an attractive potential partner can lead to a rise in mating motivation, which also serves evolutionary purposes. The derogation component, on the other hand, serves the purpose of preserving self-worth. According to this, what is beautiful and able can be threatening in a rivalry situation, whereas, persuading oneself that this is not the case decreases this threat in the eyes of the attributor. Indeed, people use self-serving attributions, which lead to biased views of themselves, when their self-worth is at stake (Robins & Beer, 2001; Sedikides & Strube, 1997).

Fösterling et al. (2007) proposed evolutionary connections regarding mating, according to which, the mating motivation, as well as the intrasexual competition, play a deciding role in the attributions one makes towards another person. Furthermore, Fösterling et al. found evidence supporting the SAB, in their study regarding homosexual males: The participants directed their derogative attributions towards attractive female targets, who they regarded as potential rivals, and they made glorifying attributions for the attractive male targets, who they regarded as potential mates. The fact that the objective of the attributions reversed in this study lends support to the theory that the SAB occurs as a result of mating motivation and rivalry (Fösterling et al., 2007). Glorifying and derogative attributions are not limited to success scenarios, but can also extend to failure scenarios. Agthe and Spörrle (2009) found that the participants attributed the failure of an attractive same-sex target to the lack of ability, whereas they attributed the failure of an attractive opposite-sex target to bad luck.
The studies where the SAB does not occur are also of importance when it comes to demonstrating evidence of its existence. In a recent study by Agthe, Spörrle, Frey, Walper, & Maner (2013), no SAB was found towards child targets or among child participants. These results are consistent with the theory because, unlike young adults, children are not expected to have a mating motivation.

Consequently, the SAB demonstrates that the attractiveness bias cannot be generalized to every person who is attractive, in every situation, regardless of the evaluator. Indeed, there appears to be a three-way interaction when it comes to the success attributions towards attractive individuals among heterosexuals: The gender of the attributor, the attractiveness of the target, and the gender of the target (Agthe & Spörrle, 2009; Agthe et al., 2008; Försterling et al, 2007). Previous research indicates that this interaction can be moderated or mediated by several factors, including the self-esteem of the attributor and their desire to socially interact with the target, i.e. stimulus person (Agthe, Spörrle, & Maner, 2011; Zweier, 2010).

**Desire for Social Interaction**

Studies have shown that one’s desire to take part in a social interaction with a person has a great influence on the qualities they attribute to that person: Lemay, Clark, & Greenberg (2010) found that the perceived desirable social traits of the targets were not directly linked to their attractiveness, but was influenced by the perceivers’ affiliation motivation towards the target persons, that is, the motivation to bond with them. Agthe et al. (2011) replicated these results in a study, where the positive bias towards the attractive potential job candidates of the opposite-sex and the negative bias towards the attractive potential job candidates of the same-sex, were mediated by their desire to socially interact with these candidates. There are also studies which specifically show the influence of the desire to socially interact within the context of the SAB,
where the SAB only then occurred when the attributor desired to socially interact with the attractive target of the opposite-sex (Agthe et al., 2008; Zweier, 2010). These findings are in line with the evolutionary psychological background of the SAB, showing that the desire to socially interact with the attractive opposite-sex person, is an important component of the mating motivation towards that person. If one has no intention of interacting with the potential mate, the act of praising said mate and belittling the potential rival becomes obsolete.

**Narcissism**

Getting its name from the Greek mythology, where a character called Narcissus falls in love with his own reflected image in the water, narcissism is still one of the most actively researched and controversial topics in psychology to this day. According to the broad, but accurate definition by Moore and Fine (1967), narcissism is “a concentration of psychological interest upon the self” (p. 62). This preoccupation with the self, which is usually accompanied by fantasies of grandiosity on one hand, and feelings of inferiority on the other, can dominate one’s interactions with others (Dammann, Grimmer, & Sammet, 2012).

Narcissism has, so far, been conceptualized as a personality disorder (e.g., Kernberg & Strauss, 1996), as well as a personality trait necessary to possessing a healthy self-concept (e.g., Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004), or a trait which is temporarily a part of the psychological development (e.g., Freud, 1914), depending on the point of view of the theoretician. As it has been the case with numerous psychological concepts, there is no consensus on the conceptualization of narcissism to this day (Pincus & Lukowitsky, 2010).

In the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5; American Psychiatric Association, 2013), narcissism is conceptualized as a personality disorder
(Narcissistic Personality Disorder, NPD), which is characterized by fluctuations in self-esteem, feelings of grandiosity (be it in an overt or covert form), attention and admiration seeking, impairments in empathy and intimacy, and unreasonably high personal standards, among other traits. In line with this conceptualization, narcissism is regarded as a personality disorder in a number of studies (e.g., Maples et al., 2010; Morf & Rhodewalt, 2001). Narcissism as a trait, on the other hand, is commonly viewed as a continuous characteristic, whose pathological aspect is defined by its quantity; namely, by how far along the line the individual stands (Back et al., 2013; Campbell, Goodie, & Foster, 2004; Campbell, Rudich, & Sedikides, 2002). Therefore, this conceptualization of narcissism can also refer to a subclinical population.

In addition to the qualitative and quantitative conceptualizations, it has been also suggested that there is a distinction between grandiose narcissism and vulnerable narcissism. While some theoreticians argue that grandiosity and vulnerability are different subtypes of narcissism, which can be observed separately on different individuals (e.g., Wink, 1991), others argue that these are intrapersonal characteristics that fluctuate within an individual to a certain extent (e.g., Kernberg, 1985; Pincus, Cain & Wright, 2014). According to Kernberg (1975), grandiosity is the result of the devaluation of one's parents and it serves to mask the underlying vulnerability. In a study by Vater et al. (2013), it was found that, regardless of their grandiose fantasies, narcissists scored lower in explicit self-esteem, compared to the control group, which pointed towards an underlying vulnerability.

In line with these argumentations, I regard narcissism as a continuous trait and I do not make distinctions between grandiose and vulnerable narcissism in this thesis. Although, due to the structure of the questionnaire we used in this study, which is within the scope of a larger
program of research, such a distinction occurred initially, while forming the subsamples of people who scored highly for narcissism versus people with lower scores.

Narcissism and an Enhanced Bias in Attributions

While social psychology research has long shown that people in general are inclined to succumb to certain cognitive biases, past research on narcissism indicates that there is a particular link between narcissism and self-enhancement (Bleske-Rechek, Remiker, & Baker, 2008; Campbell, Reeder, Sedikides, & Elliot, 2000; John & Robins, 1994; Judge, LePine, & Rich, 2006; Rhodewalt & Morf, 1995; Robins & Beer, 2001). Narcissists tend to evaluate themselves more favorably than others evaluate them, when it comes to task performance (Judge, LePine & Rich, 2006), intelligence (Gabriel, Critelli, & Ee, 1994), or attractiveness (Bleske-Rechek et al., 2008; Jackson, Ervin, & Hodge, 1992). Furthermore, narcissistic men tend to show self-aggrandizing memory distortions as a self-esteem regulation strategy (Rhodewalt & Eddings, 2002).

The inflated self-view of narcissists may also result in a tendency to believe that they are superior to others, including their romantic partners: Research shows that narcissists rate themselves more favorably on positive traits than they do their romantic partners (Campbell et al., 2002) as well as rating themselves more attractive than their romantic partners (Rohmann, Bierhoff, & Schmohr, 2011). Similarly, narcissists rate their physical appearance more highly than non-narcissists (Jackson et al., 1992). However, while narcissists regard themselves in a highly positive way (Cliffton, Turkheimer, & Oltmanns, 2004), they also have very fragile self-views, which they constantly try to make up for, by pursuing self-affirmation (Morf & Rhodewalt, 2001). This may cause to the individuals scoring highly for narcissism to show derogatory attributions towards attractive opposite-sex targets. On the other hand, self-
enhancement strategies of narcissists do not solely consist of degrading others. Kernberg (1985) postulates that feelings of both grandiosity and inferiority coexist within individuals with pathological narcissism. According to Kernberg, such individuals are consequently lead to employ strategies, such as the identification with and idealization of others, as well as the devaluation of them, in order to cope with these feelings. Indeed, narcissists pursue individuals that enhance their self-worth, be it through praise or through identification with that person, for example, in form of a “trophy spouse” (Campbell, 1999; Campbell, Rudich, & Sedikides 2002). Campbell (1999) defines identification as “a process by which the self-concept is enhanced by means of a relational association with a highly positive or valued other” (p. 1256).

Kohut & Wolf (1978) outline five different narcissistic personality types, one of which is characterized by the need to merge with idealized others, resulting in the merger not being able to differentiate oneself from them. In line with this argumentation, in a recent study by Jonason & Schmitt (2012), narcissism was associated with choosing same-sex friends who have a high social status. Moreover, narcissistic women in the study chose same-sex friends who were attractive, which provides support for the identification argument. Similarly, Cramer & Jones (2008) argue that narcissists can fulfill their need to be admired by associating themselves with those who are successful and admired, thereby allowing them to experience these qualities as though they were of their own (“admiration by association”). Indeed, it is stated in DSM-5 that narcissists refer to others excessively, regarding their self-definition and self-esteem (American Psychiatric Association, 2013), which is in line with the argumentation that narcissists also tend to identify themselves with appealing targets as a means of enhancing their self-worth. As a result, individuals scoring highly for narcissism may show an enhanced desire to socially interact with attractive targets, both same-sex and opposite-sex, which would influence their SAB scores.
In this case, the individuals who score highly for narcissism may not demonstrate derogatory attributions towards attractive same-sex targets, or they may show more glorifying attributions towards the attractive opposite-sex targets compared to those who have lower scores in narcissism.

Studies have shown that participants who have a high self-esteem do not make derogatory attributions towards the attractive same-sex targets (Agthe et al., 2011; Zweier, 2010). Studies suggest that narcissists may possess a fluctuating self-esteem, i.e. self-esteem instability (Rhodewalt, Madrian, Cheney, 1998; Zeigler-Hill & Besser, 2013). This may also play a role in narcissists needing more self-regulation than others, potentially leading to a distinction between their SAB scores and those of participants scoring lower for narcissism. The direction of this distinction would then depend on the choice of the aforementioned self-enhancement strategies.

To my knowledge, no studies exist to this day which explore the effects of narcissism on the SAB. In view of this fact, I will explore the possible links between narcissism and the SAB in this thesis, with the aim of contributing to a deeper understanding for both. In the light of the literature which associates narcissism with enhanced biases in attributions, I formed the following two-tailed hypotheses:

$H_1$: The ability and luck attributions towards the attractive target persons, differ between participants who score highly for narcissism and those with lower scores.

$H_{1a}$: The ability and luck attributions towards the attractive male target persons, differ between male participants who score highly for narcissism and those with lower scores (attractive same-sex condition).
H1b: The ability and luck attributions towards the attractive female target persons, differ between male participants who score highly for narcissism and those with lower scores (attractive opposite-sex condition).

H1c: The ability and luck attributions towards the attractive female target persons, differ between female participants who score highly for narcissism and those with lower scores (attractive same-sex condition).

H1d: The ability and luck attributions towards the attractive male target persons, differ between female participants who score highly for narcissism and those with lower scores (attractive opposite-sex condition).

H2: The desire to socially interact with the attractive targets differs between participants scoring highly for narcissism and those with lower scores.

H2a: The desire to socially interact with the attractive male target differs between male participants who score highly for narcissism and those with lower scores (attractive same-sex condition).

H2b: The desire to socially interact with the attractive female target differs between male participants who score highly for narcissism and those with lower scores (attractive opposite-sex condition).

H2c: The desire to socially interact with the attractive female target differs between female participants who score highly for narcissism and those with lower scores (attractive same-sex condition).
H2d: The desire to socially interact with the attractive male target differs between female participants who score highly for narcissism and those with lower scores (attractive opposite-sex condition).

H3: The self-attractiveness and ability ratings of the participants who scored highly on narcissism differ from their attractiveness and ability ratings towards the attractive opposite-sex targets.

H3a: The self-attractiveness ratings of the male participants who scored highly on narcissism differ from their attractiveness ratings towards the attractive female target.

H3b: The self-attractiveness ratings of the female participants who scored highly on narcissism differ from their attractiveness ratings towards the attractive male target.

H3c: The self-ability ratings of the male participants who scored highly on narcissism differ from their ability ratings towards the attractive female target.

H3d: The self-ability ratings of the female participants who scored highly on narcissism differ from their ability ratings towards the attractive male target.

Method

Recruiting

This study was one part of a bigger research project, where a number of researchers worked together during the design and data collection. We posted an announcement regarding the study on social media platforms and sent it to e-mail lists of a number of universities in Vienna. We hung posters on bulletin boards and distributed flyers within the premises of the University of Vienna. The announcement indicated that the study was about “the influence of
Sample

Initial Sample. We administered an online screening in order to obtain participants that were relevant to each individual study. We used an online questionnaire consisting of demographic information and two narcissism inventories, namely the German versions of the Narcissism Inventory - 90 (NI-90) (Schoeneich et al., 2000) and the Pathological Narcissism Inventory (PNI) (Morf et al., 2015) in the screening process. Those who completed the online screening received a brief feedback about their personality based on their NI-90 scores.

We excluded the participants from the study who stated the following during the online screening: Age under 18, any sexual orientation other than heterosexual, currently in psychological or psychiatric treatment, a list of diagnoses derived from ICD-10 and DSM-IV (Depression, Anxiety Disorder, Bipolar Disorder, and Personality Disorders), usage of psychotropic drugs, and German language level less than “fluent in speech and writing”. We included a question about sexual orientation in the screening questionnaire and excluded those who did not define themselves as heterosexual, due to the theory being based on heterosexual individuals. Participants who were diagnosed with psychological disorders were excluded so as to control for confounding variables and keep the sample as subclinical as possible.

We grouped the remaining participants as low and high scorers on PNI, the latter consisting of the subcategories of grandiose narcissism and vulnerable narcissism. Although I conceptualized grandiose and vulnerable narcissism as two sides of narcissism that can coexist within an individual and therefore used global scores only, the sampling included the
differentiation of these forms of narcissism for the purposes of other studies that this sample was also used for. The low-narcissism group consisted of participants whose PNI total scores fell between the 35th and 65th percentile with both PNI vulnerability and PNI grandiosity scores falling between the 25th and 75th percentile. We set these percentiles as criteria, avoiding choosing the participants with the lowest scores in PNI, in order to obtain a group of individuals who showed a healthy level of self-worth. This group functioned as a contrast group. The grandiose narcissism group consisted of individuals whose PNI-grandiosity scores fell over the percentile of 75. The vulnerable narcissism group consisted of those whose PNI-vulnerability scores fell over the percentile of 75 and grandiosity scores fell under the percentile of 75 in PNI. Both narcissism groups consisted of individuals whose PNI total scores fell over the 75th percentile.

The number of the participants who completed the online screening was 1362. After the application of the exclusion criteria and choosing of the relevant participants based on quantiles of PNI scores, we invited the participants who fit the criteria for our samples to the premises of the University of Vienna to complete the study. We thereby obtained a sample of 88 participants.

**Current Sample.** After participants of the initial sample completed the study, each researcher singled out the relevant sample for their hypotheses. In this current study, the sample consisted of 48 participants with 24 participants who had the highest scores on PNI in total (12 male, 12 female) and 24 participants from the low-narcissism group who had the lowest scores on PNI in total (12 male, 12 female). I selected the sample this way in order to maintain balanced cell sizes, given that there were only 12 male participants who scored highly for narcissism.

The mean age of the sample was 22.97 (range= 19-30, SD = 2.81). Approximately 89% of the sample consisted of university students, 82% of who were high school graduates, and 18%
were university graduates. Nearly half (48%) of the sample were in relationships at the time of the study.

**Measures**

**Cover Stories and Stimulus Persons.** We used cover stories in order to provide the participants with the information about the successful career paths of each of the four stimulus persons, as well as other information to conceal the actual purpose of the study. Every cover story was presented with one color photo of the relevant stimulus person, who the story was about. We chose generic Austrian names for the stimulus persons: Alexander, Michael, Anna, and Julia.

We wrote four different cover stories to be presented with the four different photographs in a randomized order and combination in order to avoid a possible sequence effect. We then asked a different group of raters (N = 32), with an age range of 23 to 42, to evaluate these stories with regard to their comparability. The raters evaluated the comparability of the stories in various areas, including “structure of the story”, “how much ability the person has”, and “how lucky the person got”, using a Likert scale ranging from 1 (*not at all comparable*) to 6 (*very comparable*). The raters did not see photos or names of the stimulus persons, who were referred to as “he” and “she” in the stories. This was the only questionnaire in the study that we administered in a pen and paper form. The one-way repeated measures ANOVA results indicated that there was no statistically significant difference between the cover stories ($F(3,93) = 2.21$, $p = .092$, $\eta^2 = .067$). On average, the raters evaluated the stories to be similar.

Photos of the stimulus persons derived from a prestudy where 40 participants rated a series of photos using a Likert scale ranging from 0 (*not attractive at all*) to 10 (*very attractive*). All photos used in the study were of Caucasian people in their 20’s. In this prestudy, both of the
attractive stimulus persons (male: $M = 8.11$, $SD = 1.40$, female: $M = 8.07$, $SD = 1.18$) were rated as significantly more attractive than both of the unattractive stimulus persons (female: $M = 3.00$, $SD = 1.70$, male: $M = 3.89$, $SD = 1.91$), (Zweier, 2010). In this current study, I used a t test for paired samples, due to the hypotheses about the attractiveness of the stimulus persons being directional. Analogous to the Zweier study, the results indicated that the participants rated the attractive male stimulus person to be significantly more attractive ($M = 4.82$, $SD = 0.70$) than the unattractive male stimulus person ($M = 1.87$, $SD = 1.09$), $t(47) = 17.27$, $p < .001$. Similarly, the participants rated the attractive female stimulus person to be more attractive ($M = 5.10$, $SD = 0.66$) than the unattractive female stimulus person ($M = 2.05$, $SD = 1.11$), $t(47) = 18.45$, $p < .001$.

Results of the one way repeated measurement ANOVA with a Greenhouse-Geisser correction revealed that the mean of the estimated age of the stimulus persons differed statistically significantly, $F(2.58,121.34) = 23.88$, $p < .001$, $\eta^2 = .337$. Post hoc comparisons using the Bonferroni correction indicated that the participants overall estimated the unattractive male stimulus person ($M = 27.52$, $SD = 0.41$) to be older than the attractive male stimulus person ($M = 26.21$, $SD = 0.30$), $p = .002$, whereas no significant estimated age difference was found between the attractive female stimulus person ($M = 25.52$, $SD = 0.23$) and the unattractive female stimulus person ($M = 24.96$, $SD = 0.28$), $p = .254$.

**Sexual Attribution Bias Scales.** After reading each cover story, the participants answered four distraction questions, which served the purpose of masking the real purpose of the study. For the measurement of the SAB, we administered a SAB Questionnaire (Zweier, 2010), with the help of which the participants attributed the role of luck and ability in the career success of the stimulus persons. We measured these attributions with the help of the luck-scale (e.g., “She has reached this point in her career due to advantageous conditions”) and the ability-scale
(e.g., “She has reached this point in her career with the help of her skills”). Both ability and luck scales consisted on 4 items each, which the participants rated using a 7-point Likert scale ranging from 0 = strongly disagree to 6 = strongly disagree.

**Desire for Social Interaction Scale.** Participants expressed the extent to which they would like to socially interact with the stimulus persons, via a scale consisting of 4 items (e.g., “I can imagine working with him”). Similar to the SAB scales, the participants rated these items on a 7-point Likert scale (0 = strongly disagree to 6 = strongly agree).

An overview of the internal consistencies of the scales of the SAB Questionnaire and the Desire for Social Interaction Scale is presented on Table 1.

<table>
<thead>
<tr>
<th>Stimulus person</th>
<th>Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ability</td>
</tr>
<tr>
<td>Attractive male</td>
<td>.86</td>
</tr>
<tr>
<td>Unattractive male</td>
<td>.86</td>
</tr>
<tr>
<td>Attractive female</td>
<td>.91</td>
</tr>
<tr>
<td>Unattractive female</td>
<td>.89</td>
</tr>
</tbody>
</table>

*Note. N = 88.*

**Attributions towards Self Scale.** I constructed a scale consisting of self-directed versions of the items of the luck and ability scales (e.g., “I have reached this point in my career with the help of my skills”) in order to be able to make comparisons between the attributions of the participants towards themselves and towards the stimulus persons. The participants rated these items on a 7-point Likert scale ranging from 0 = strongly disagree to 6 = strongly agree. The Cronbach’s alpha values were .81 for self-directed ability scale and .69 for the self-directed luck scale, which can be interpreted as “good” and “acceptable” respectively.
Pathological Narcissism Inventory (PNI). Pathological Narcissism Inventory (Morf et al., 2015) is an inventory which covers two dimensions of narcissism, namely narcissistic grandiosity and narcissistic vulnerability. It consists of 7 scales and 54 items in total. These items are scored on a 6-point Likert scale that ranges from 1 (not at all like me) to 6 (very much like me). The validation of the German version of PNI was in progress at the time of the study. The internal consistency of the PNI global score in this current study was good (α = .86) within the initial sample of 88 participants.

Narcissism Inventory - 90 (NI - 90). The German version of the Narcissism Inventory - 90 (Schoeneich et al., 2000) is the short version of the Narcissism Inventory (NI), (Deneke & Hilgenstock, 1989). NI-90 consists of 18 scales and 90 items. The participants rated the items on a 5-point Likert scale which ranges from 1 (not at all) to 5 (extremely). The internal consistency of the NI-90 global score in this current study was excellent (α = .91) within the initial sample of 88 participants.

The complete list of questionnaires that each participant filled out within the scope of the research project can be found in appendix A.

Manipulation Check

In order to assess if the stimulus persons had the desired effect on the current sample, we included questions about the attractiveness and the estimated age of each of the four stimulus persons in the SAB questionnaire. We used a scale called “Manipulation check – attractiveness” for evaluating the attractiveness of stimulus persons (Zweier, 2010). Participants of the initial sample of N = 88 rated the appearance of the stimulus persons, using a 7-point Likert scale that ranged from 0 (not attractive at all) to 6 (very attractive). The internal consistency for the attractiveness rating scales were good, with Cronbach’s alpha values of .85 and .89 for the
attractive stimulus persons and the unattractive stimulus persons, respectively. We presented the question about the estimated age of the stimulus person in an open form.

Design

This study was based on preliminary studies on SAB (Agthe et al., 2013; Agthe & Spörrle, 2009; Agthe, Spörrle, & Försterling, 2008; Agthe et al., 2010; Försterling et al., 2007; Zweier, 2010). We used a 2 (gender of the participant) x 2 (gender of the stimulus person) x 2 (attractiveness of the stimulus person: attractive vs. unattractive) design with repeated measures in this study. The difference between the design of this current study and the preliminary studies is the fact that all of the participants of the current study were subjected to all kinds of stimulus persons in a randomized order (attractive male, unattractive male, attractive female, unattractive female), whose success they then attributed to either luck or ability.

Procedure

After the selection of the initial sample, based on the online screening results, we invited participants fitting the criteria for our samples to the premises of the Faculty of Psychology of the University of Vienna. After giving their written consent to take part in the study, all participants completed the inventories on a computer, in the presence of two female researchers. We tested one to two participants each time, but none of the participants saw each other or anyone other than the instructors. The participants who completed the questionnaires received 20 Euros for their participation. We did not answer any questions about the nature of the study while the data collecting process continued. We formed an e-mail list to inform those who were interested in the global results after the conclusion of the studies.
Results

Sexual Attribution Bias

In order to determine if the SAB was existent in the sample, I did a two way 2 (stimulus person gender) x 2 (stimulus person attractiveness: attractive vs. unattractive) repeated measures ANOVA using the ability scales and the luck scales for the stimulus persons (attractive male, unattractive male, attractive female, unattractive female), whereas the participant gender operated as a between factor. I then made the same calculation separately for the high-narcissism and the low-narcissism groups.

Ability. The overall results indicated that there was not a significant interaction between the gender of the stimulus person, attractiveness of the stimulus person, and the gender of the participant, with regard to the attribution of ability towards the stimulus person $F(1,46) = 2.63, p = .111, \eta^2 = .05$. The separate calculations per group did not yield any significant 3-way interactions either: The results for the high-narcissism and low narcissism groups were $F(1,22) = 2.04, p = .167, \eta^2 = .08$ and $F(1,22) = 0.57, p = .46, \eta^2 = .03$, respectively. The means and standard deviations for the ability ratings by male participants ($n=24$) were: $M = 13.00, SD = 3.30$ for the attractive male stimulus person, $M = 12.12, SD = 3.50$ for the unattractive male stimulus person, $M = 12.25, SD = 3.73$ for the attractive female stimulus person, and $M = 12.62, SD = 3.58$ for the unattractive female stimulus person. The means and standard deviations for the ability ratings by female participants ($n=24$) were: $M = 12.79, SD = 3.71$ for the attractive male stimulus person, $M = 14.00, SD = 4.10$ for the unattractive male stimulus person, $M = 13.04,$
$SD = 3.88$ for the attractive female stimulus person, and $M = 12.29, SD = 4.49$ for the unattractive female stimulus person. Figures 1 and 2 show the ability ratings towards the stimulus persons by the male and the female participants respectively.

**Figure 1.** Attribution of ability towards the stimulus persons by male participants.

**Figure 2.** Attribution of ability towards the stimulus persons by female participants.
**Luck.** The overall results indicated that there was no significant interaction between the gender of the stimulus person, attractiveness of the stimulus person and the gender of the participant, with regard to the attribution of luck towards the stimulus person, $F(1,46) = 0.26, p = .608, \eta^2 = .01$. Similarly, the separate calculations for the high-narcissism and the low-narcissism groups indicated no significant 3-way interactions, $F(1,22) = 1.29, p = .268, \eta^2 = .05$ and $F(1,22) = 0.16, p = .689, \eta^2 = .01$, respectively. The means and standard deviations for the luck ratings by male participants ($n=24$) were: $M = 12.37$, $SD = 3.89$ for the attractive male stimulus person, $M = 11.67$, $SD = 3.98$ for the unattractive male stimulus person, $M = 12.29$, $SD = 4.23$ for the attractive female stimulus person, and $M = 11.50$, $SD = 3.01$ for the unattractive female stimulus person. The means and standard deviations for the luck ratings by female participants ($n=24$) were: $M = 13.58$, $SD = 3.94$ for the attractive male stimulus person, $M = 12.58$, $SD = 4.7$ for the unattractive male stimulus person, $M = 13.33$, $SD = 5.36$ for the attractive female stimulus person, and $M = 13.17$, $SD = 3.64$ for the unattractive female stimulus person. Figures 3 and 4 show the luck ratings towards the stimulus persons by the male and the female participants respectively.

![Mean Luck Ratings](image-url)
Figure 4. Attribution of luck towards the stimulus persons by female participants.

Desire for Social Interaction. Similar to the SAB calculations, I did a two way 2 (stimulus person gender) x 2 (stimulus person attractiveness: attractive vs. unattractive) repeated measures ANOVA, this time using the Desire for Social Interaction Scale, whereas the participant gender operated as a between factor. The results revealed that there was a significant main effect of stimulus person attractiveness on the desire for social interaction, $F(1,46) = 13.76$, $p = .001$, $\eta^2 = .23$, indicating that the attractiveness of the stimulus person had a significant influence on participants’ desire to socially interact with them. There was a significant interaction between the gender of the stimulus person and the gender of the participant, ($F(1,46) = 17.56$, $p < .001$, $\eta^2 = .28$), as well as a significant three-way interaction between the gender of the stimulus person, the attractiveness of the stimulus person, and the gender of the participant, $F(1,46) = 8.98$, $p = .004$, $\eta^2 = .163$. The male participants showed the highest desire for social interaction towards the attractive female stimulus person ($M = 16.04$, $SD = 1.07$), whereas the female participants showed the highest desire for social interaction towards the attractive male stimulus person ($M = 13.25$, $SD = 1.13$).
Narcissism and SAB

I conducted a one way between groups ANOVA to explore the possible impact of narcissism (high vs. low) on the attributions towards the attractive stimulus person, as measured by “Ability” and “Luck” scales.

Male Participants. The results of the one way ANOVA indicated that there was no significant difference between the male participants who scored highly in PNI (high narcissism group, \(n = 12\)) and the male participants who scored lower in PNI (low narcissism group, \(n = 12\)) regarding the attribution of ability towards the attractive female stimulus person, \(F(1,22) = 0.07, p = .797, \eta^2 = .003\), or towards the attractive male stimulus person, \(F(1,22) = 1.26, p = .275, \eta^2 = .05\). Similarly, the results indicated that there was no significant difference between the groups concerning the attribution of luck towards the attractive female stimulus person, \(F(1,22) = 0.11, p = .743, \eta^2 = .004\), or towards the attractive male stimulus person, \(F(22,1) = 0.07, p = .799, \eta^2 = .002\).

Table 2 shows an overview of the means and standard deviations of the abovementioned attributions made by male participants.
Narcissism and the Sexual Attribution Bias

Table 2
Means and Standard Deviations of Ability and Luck Attributions made by Male Participants of High-narcissism and Low-narcissism Groups

<table>
<thead>
<tr>
<th>Attribution</th>
<th>Stimulus Person</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male, attractive</td>
<td>Female, attractive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Ability</td>
<td>High-narcissism</td>
<td>17.75</td>
<td>3.91</td>
</tr>
<tr>
<td></td>
<td>Low-narcissism</td>
<td>16.25</td>
<td>2.49</td>
</tr>
<tr>
<td>Luck</td>
<td>High-narcissism</td>
<td>12.17</td>
<td>4.24</td>
</tr>
<tr>
<td></td>
<td>Low-narcissism</td>
<td>12.58</td>
<td>3.68</td>
</tr>
</tbody>
</table>

Note. $n = 12$ for high-narcissism and low-narcissism groups each.

Female Participants. According to the results of the Levene test, the assumption of homogeneity of variance was violated between the female participants of the high narcissism group and the female participants of the low narcissism group, in relation to the attribution of ability towards the attractive male stimulus person, $F(1,22) = 4.70, p = .041$. I used the Welch test here instead of ANOVA, due to the violation of this assumption. The results of the Welch test indicated that the groups did not differ significantly regarding attributions ability towards the attractive male stimulus person, $F(1,17.25) = 1.36, p = .26, \eta^2 = .06$. The ANOVA results revealed that there was no significant difference between the attributions of ability in groups towards the attractive female stimulus person, $F(1,22) = 1.04, p = .319, \eta^2 = .04$. According to the ANOVA results, there was, however, a significant difference between groups with respect to the attribution of luck towards the attractive male stimulus person: The female participants of the high-narcissism group attributed significantly more luck to the attractive male stimulus person than the female participants of the low-narcissism group, $F(1,22) = 6.40, p = .019, \eta^2 = .22$. The
results of the Levene test revealed that the assumption of homogeneity of variance was also violated between groups with regard to the attribution of luck, $F(1,22) = 4.57, p = .044$. The results of the Welch test revealed that there was no significant difference between groups, concerning the attribution of luck towards the attractive female stimulus person, $F(1,17.71) = 1.14, p = .299, \eta^2 = .05$. Table 3 shows an overview of the means and standard deviations of the abovementioned attributions made by female participants.

Table 3

<table>
<thead>
<tr>
<th>Attribution</th>
<th>Male, attractive</th>
<th>Female, attractive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Ability</td>
<td>High-narcissism</td>
<td>15.92</td>
</tr>
<tr>
<td></td>
<td>Low-narcissism</td>
<td>17.67</td>
</tr>
<tr>
<td>Luck</td>
<td>High-narcissism</td>
<td>15.42</td>
</tr>
<tr>
<td></td>
<td>Low-narcissism</td>
<td>11.75</td>
</tr>
</tbody>
</table>

Note. $n = 12$ for high-narcissism and low-narcissism groups.

**Narcissism and the Desire for Social Interaction**

I conducted a one way ANOVA to explore the possible differences between the high-narcissism group and the low-narcissism group, concerning their desire to interact with the attractive stimulus persons socially.

**Male Participants.** The results revealed that there was no significant difference between the male participants of the high-narcissism group ($M = 12.17, SD = 4.84$) and the male
participants of the low-narcissism group \((M = 11.42, SD = 5.25)\), concerning the desire for social interaction towards the attractive male stimulus person, \(F(1,22) = 0.13, p = .719, \eta^2 = .005\).

Regarding the desire for social interaction towards the attractive female stimulus person, male participants of the high-narcissism group \((M = 15.25, SD = 3.62)\) did not significantly differ from the male participants of the low-narcissism group \((M = 16.83, SD = 4.97)\), \(F(1,22) = 0.80, p = .382, \eta^2 = .03\).

**Female Participants.** The desire for social interaction towards the attractive male stimulus person did not significantly differ between the female participants of the high-narcissism group \((M = 14.84, SD = 6.79)\) and that of the low narcissism group \((M = 11.67, SD = 4.94)\), \(F(1,22) = 1.70, p = .205, \eta^2 = .07\). Similarly, there was no significant difference between the high-narcissism group \((M = 8.50, SD = 7.14)\) and the low-narcissism group \((M = 11.33, SD = 4.44)\) with respect to the desire for social interaction towards the attractive female stimulus person, \(F(1,22) = 1.36, p = .256, \eta^2 = .06\).

**Narcissism and Comparisons of Self versus the Attractive Opposite Sex Stimulus Persons**

In order to test the hypothesis that the participants who score highly in PNI evaluate their own attractiveness and ability significantly different than the attractiveness and the ability of the attractive opposite-sex stimulus person, I conducted a paired samples t test.

**Male Participants.** The results suggested that the male participants of the high-narcissism group estimated the attractiveness of the attractive female stimulus person \((M = 5.08, SD = 0.62)\) to be significantly higher than their own attractiveness \((M = 3.14, SD = 1.02)\), \(t(11) = 6.00, p < .001\). However, similar results occurred for the male participants of the low-narcissism group: The participants found the attractive female stimulus person to be significantly more
attractive ($M = 5.29$, $SD = 0.56$) than themselves ($M = 3.79$, $SD = 0.65$), $t = 6.24$, $p < .001$. With regard to the attributions of ability, the results revealed that the male participants of the high-narcissism group attributed significantly more ability to the attractive female stimulus person ($M = 16.00$, $SD = 3.93$) than they did to themselves ($M = 10.75$, $SD = 1.02$), $t(11) = 5.59$, $p < .001$. Similarly, male participants of the low-narcissism group estimated the attractive female stimulus person to have significantly more ability ($M = 16.42$, $SD = 3.89$) than themselves ($M = 10.67$, $SD = 2.90$), $t(11) = 4.03$, $p = .002$.

**Female Participants.** The results of the t test revealed that the female participants of the high-narcissism group rated the attractiveness of the attractive male stimulus person ($M = 4.98$, $SD = 0.89$) to be significantly higher than their own attractiveness ($M = 3.79$, $SD = 0.64$), $t(11) = 3.42$, $p = .006$. Female participants of the low-narcissism group also rated the attractive male stimulus person ($M = 4.93$, $SD = 0.64$) to be significantly more attractive than themselves ($M = 3.75$, $SD = 0.75$), $t(11) = 5.62$, $p < .001$. The results also revealed that the attribution of ability towards the attractive male stimulus person ($M = 15.92$, $SD = 4.54$) was significantly higher than the attribution of ability towards oneself ($M = 11.00$, $SD = 2.37$) within the female participants of the high-narcissism group, $t(11) = 4.20$, $p = .001$. These results were also analogous to those of the low-narcissism group: Female participants of the low-narcissism group attributed significantly more ability to the attractive male stimulus person ($M = 17.67$, $SD = 2.53$) than to themselves ($M = 10.83$, $SD = 2.52$), $t(11) = 7.64$, $p < .001$.

**Discussion**

In this study, I attempted to replicate the previous studies supporting the existence of the SAB, this time adding narcissism into the equation. I compared the participants who scored highly for narcissism to those with lower scores regarding the SAB, as well as their desire to
socially interact with the attractive stimulus persons. In addition, I investigated the social comparisons that the participants with high and low scores in narcissism made between themselves and the attractive stimulus persons, with regard to physical attractiveness and ability. To my knowledge, this present study is the only SAB study so far where all participants rated all stimulus persons and the ratings of each participant towards different stimulus persons were calculated. This added an intraindividual character to the measures, making sure that any possible differences in the ratings towards the stimulus persons would not derive from individual differences.

**Sexual Attribution Bias**

Contrary to previous research, I did not find a three-way interaction between the gender of the participant, gender of the stimulus person, and the attractiveness of the stimulus person with regard to the ability and luck ratings towards the stimulus persons in this study. I could not replicate the SAB in this current study. The participants did not glorify the attractive opposite sex stimulus persons, nor did they derogate the attractive same-sex stimulus persons.

Although not statistically significant, there was a trend between male participants to attribute the most ability to the attractive male stimulus person compared to all other stimulus persons. Indeed, the male participants attributed more ability to the attractive male stimulus person than they did the attractive female stimulus person. These findings are in line with those of Lee, Pitesa, Pillutla, and Thau (2015), according to which, raters tend to evaluate attractive male candidates as more competent than unattractive male targets. In their study, Lee, Pitesa, Pillutla, and Thau found no such association between attractiveness and competence when it came to the female targets.
The female participants, on the other hand, showed almost no difference in their ability ratings between the attractive male and the attractive female stimulus persons. The female participants attributed the highest ability to the “unattractive” male stimulus person, and the lowest ability to the “unattractive” female stimulus person. This trend towards the glorification of the “unattractive” male stimulus person and the derogation of the “unattractive” female stimulus person is not in accordance with the evolutionary component of the SAB theory.

According to this, participants were not supposed to regard the “unattractive” opposite-sex person as a mate and the “unattractive” same-sex person a rival, which would make the glorification and derogation obsolete. However, the derogation towards the unattractive same-sex person, might derive from individuals not wanting to be associated with others who exhibit a quality which they regard as negative, such as being “unattractive” (Schimel, Pyszczynski, Greenberg, O'Mahen & Arndt, 2000). According to this, derogation is a form of distancing oneself from the others.

With regard to the luck ratings, the male participants attributed almost the same amount of luck to the attractive male and female stimulus persons. Although not statistically significant, there was a trend within the male participants towards attributing less luck to the “unattractive” stimulus persons than the attractive ones. The female participants attributed the least amount of luck to the unattractive male stimulus person and the most luck to the attractive male stimulus person. The fact that the “unattractive” male stimulus person received the highest ability attributions and the lowest luck attributions from the female participants might be interpreted as a trend towards glorification of that stimulus person. This might derive from the fact that the “unattractive” stimulus person does not have the physical appearance advantage that the attractive stimulus person has. Therefore, it may be argued that the possibility of the career
success of the “unattractive” person depending on other factors, such as physical appearance rather than ability, is lower than that of the attractive person. There was, however, a gender difference in this reasoning, given the fact that the male participants did not make these attributions towards the female stimulus persons.

One possible explanation for the lack of the SAB in this current sample is a lack of mating motivation among the participants. The rivalry occurs when the mating motivation is existent, because the same-sex rivalry is for the potential mate. The lack of mating motivation could be the result of a cognitive overload due to the length of the questionnaires and having to answer the same questions multiple times, due to the nature of the repeated measurement. Unlike the previous SAB studies, where each participant evaluated one stimulus person (Agthe et al., 2008; Agthe, et al., 2011; Agthe & Spörrle, 2009; Försterling et al., 2007; Zweier, 2010), the repeated measures design in this study may have caused cognitive exhaustion. Studies have shown that mental fatigue can have considerable effects on one’s attention during a task (e.g., Boksem, Meijman, & Lorist, 2005). In a study by Lorist et al. (2000), mental fatigue was accompanied by negative moods, including depression and anger. Zweier (2010) found that the participants with high scores in depression did not show SAB. In fact, there was a negative correlation between depression scores and SAB scores; the more depressed a participant was, the lower were their SAB scores. Because this current study was a part of a bigger research project where different researchers had different hypotheses, the participants ended up filling out a two hour long questionnaire, where some questions came up more than once. In spite of the fact that we encouraged the participants to take a break after the first hour of our two hour long questionnaire, some participants chose not to, which may have led to some mental fatigue.
effects. These effects may have also emerged among the participants who did take a break, due to the long and repetitive nature of the study.

**Narcissism and Sexual Attribution Bias**

There were no statistically significant differences between the participants who scored highly for narcissism and those with lower scores with regard to their luck and ability ratings towards the attractive stimulus persons. Despite the lack of statistical significance, the male participants who scored highly for narcissism attributed more ability towards the attractive male stimulus person than towards the attractive female stimulus person. The male participants of the low-narcissism group, on the other hand, attributed almost the same amount of ability towards the attractive male and female stimulus persons. Similarly, the luck attributions made by the male participants of the high narcissism group, as well as the low narcissism group, barely differed between the attractive male and female stimulus persons. The female participants with high scores in narcissism attributed more ability toward the attractive female stimulus person than toward the attractive male stimulus person. On the other hand, ability attributions towards the attractive male and female stimulus persons barely differed among the female participants with low scores in narcissism. These results are in line with the argumentation that narcissists tend to identify themselves with individuals, who could help enhance their self-worth (Campbell, 1999; Campbell, Rudich, & Sedikides 2002; Kernberg, 1985). Their motivation to identify themselves with the successful and attractive stimulus person of the same sex might have overshadowed their mating motivation toward the attractive opposite-sex stimulus persons and feelings of rivalry towards the attractive same-sex persons.

The female participants of the high narcissism group attributed more luck to the attractive male stimulus person than the female, unlike the female participants of the low
narcissism group, who attributed more luck to the attractive female stimulus person. Although not statistically significant, the fact that the female participants attributed more luck and less ability towards the attractive male stimulus person might be interpreted as a trend towards a derogation thereof. This points toward a reversed pattern of the SAB among the female participants of the high narcissism group, where the derogation is peculiar to the attractive opposite-sex stimulus persons. These findings could be the results of possible gender differences in narcissism (Grijalva et al., 2015).

**Desire for Social Interaction**

The overall results revealed that there was a significant three-way interaction between the gender of the stimulus person, the gender of the participant, and the attractiveness of the stimulus person. The participants showed the highest desire for social interaction towards the attractive opposite-sex stimulus persons. These results are consistent with the previous studies on the desire for social interaction within the context of the SAB (Agthe et al., 2008; Agthe et al., 2011; Lemay et al., 2010; Zweier, 2010). Interestingly, the existence of the desire for social interaction towards the attractive opposite-sex stimulus person did not result in the glorification of these. Namely, the participants showed significantly more desire to be in the same social setting with the attractive opposite-sex stimulus persons compared to the other stimulus persons. However, this did not mean that they attributed more ability and less luck to the attractive opposite-sex persons.

**Narcissism and the Desire for Social Interaction**

Contrary to my expectations, no statistically significant difference was evident between the participants who scored highly for narcissism and those with lower scores with respect to the
desire for social interaction towards the attractive stimulus persons. There was a trend among the male participants who scored highly for narcissism towards a higher desire to socially interact with attractive male stimulus persons, compared to those with lower scores in narcissism. Conversely, their desire for social interaction with the attractive female stimulus persons was lower than that of those with lower scores in narcissism. This indicates a higher motivation to affiliate with attractive same-sex targets and a lower motivation to affiliate with the attractive opposite-sex targets within the male participants who scored highly for narcissism, compared to those with lower scores. The male participants scoring highly on narcissism being more interested in affiliating or identifying themselves with attractive and successful same-sex stimulus person, might once again point towards the intensive self-interest overshadowing the mating motivation. It is possible that these participants were more interested in identifying themselves with a role model rather than investing their interest in an attractive and successful potential partner. This trend was reversed as far as the female participants were concerned. Female participants who scored highly for narcissism showed a higher desire for social interaction towards the attractive male stimulus person, compared to those with lower scores. Conversely, they expressed a lower desire to socially interact with the attractive female stimulus person, compared to those with lower scores in narcissism. The results indicating a possible gender difference in narcissism scores regarding the participants’ desire to socially interact with attractive stimulus persons are in line with those of Grijalva et al. (2015).

**Narcissism and Comparisons of Self versus the Attractive Opposite Sex Stimulus Persons**

Both male and female participants who scored highly for narcissism, as well as those with lower scores, rated the attractive opposite sex stimulus person to be significantly more attractive than themselves. In other words, the narcissism level of the participant (high vs. low)
had no effect on the difference between their estimated attractiveness of self and the attractive opposite-sex stimulus person. The participants also attributed significantly more ability to the attractive opposite sex person than they did themselves, regardless of their narcissism level or gender. These results suggest that the participants in this study regarded the attractive opposite sex stimulus persons to be superior to themselves in socially important domains. This might have influenced their mating motivation in a negative way: Lockwood & Kunda (1997) found that individuals who have outstanding achievements can have a deflating effect on others. According to this, if people view the achievements of these individuals as relevant, yet unattainable on their part, this leads to a self-deflation. However, if the relevant success of the outstanding individual is attainable, it leads to self-enhancement and inspiration. Given the fact that the majority of the sample in this study consisted of university students, reading about the success stories of attractive people around their age, who found a job right after the university, may have had a self-deflating effect. This would support the reasoning that the participants possibly regarded the attractive stimulus persons to be role models rather than potential mates and rivals.

**Limitations**

There are certain limitations in this study which should be noted. First and foremost, the study was based on a small sample. Due to the difficulties in recruiting male participants with high scores for narcissism and the necessity to form groups with equal sizes, each group in the sample consisted of 12 participants. The majority of these participants were university students. In order to be able to get generalizable results, future studies should involve more participants and a less homogenous sample.

There are also certain limitations that come with the usage of questionnaires in research. As is the case with all self-report measures, the results of the study relied on how honestly the
participants answered the questions, without showing socially desirable response patterns. Narcissism is particularly associated with academic dishonesty (Brunell, Staats, Barden, & Hupp, 2011), so in line with this finding, it can be questioned how sincerely the participants with high scores for narcissism answered the SAB questions. This particular limitation is also relevant, when it comes to the questions regarding the exclusion criteria. After the screening, people who were diagnosed with a psychological disorder were excluded from the study. The diagnoses were, however, asked in a self-report questionnaire. Not only did honesty play an important role in the exclusion criteria, but also, the fact that someone was not diagnosed with a psychological disorder does not necessarily mean they do not have it.

Another limitation in this study concerns the stimulus persons. Although the participants perceived attractive stimulus persons and the “unattractive” stimulus persons as such, there was a significant difference in the estimated age of the male stimulus persons: The participants estimated the unattractive male stimulus person to be older than the attractive male stimulus person, whereas there was no such difference between the attractive and the “unattractive” female stimulus persons. This could have an influence on the results, because a successful career at an earlier age could be the result of having more ability and/or more luck than others. On the other hand, the fact that the attractive male stimulus person has a successful career in the story, could be the reason why the participants perceived him to be younger; youth is a desirable characteristic in the evolutionary sense, signaling fertility (e.g., Buss, 1989).

Considering that a mating motivation should be existent for the SAB to occur (Agthe et al., 2013; Fösterling et al., 2007; Zweier, 2010), it can be concluded that the mating motivation was either not there or was overshadowed by other factors in this present study. There are many factors which may influence mating motivation, including, but not limited to, being in a
relationship (Bazzini & Shaffer, 1999) and how high the relationship commitment is (Lydon, Fitzsimons, & Naidoo, 2003). Because of the problems with recruiting participants who fit the criteria of this study, I could not match these factors in the groups. Future studies should focus on recruiting a larger sample where each participant rates each stimulus person, in order to explore the SAB further in an intraindividual level.

Conclusion

This current study serves as a pilot project investigating the possible effects of narcissism on the SAB and social comparisons with attractive targets. I could not replicate the SAB in this sample. Contrary to my predictions based on the hypotheses suggesting a difference in the SAB as well as the self-comparison scores with the attractive targets regarding the narcissism level, the participants with high and low scores in narcissism did not differ significantly. This could be the result of the aforementioned methodological problems in this study. In this study, I did not find any SAB in the low narcissism group or the high narcissism group. These findings point towards a lack of mating motivation and a possible exhaustion effect among the participants of this study. For that reason, the results suggesting that the comparison of self versus others does not differ between groups with high and low levels of narcissism, should be interpreted with caution. Further studies in this field should focus on attaining a larger sample and controlling for more of the possible confounding factors.
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Appendix A

Abstract

Attractiveness stereotypes have long been of interest in the psychology research. Many studies indicate that people are inclined to attribute positive characteristics to attractive individuals to the extent of positively discriminating them. According to the recently discovered sexual attribution bias (SAB), young and heterosexual adults show a glorifying attribution towards the success stories concerning attractive opposite sex persons. However, this glorifying attribution is replaced with a derogating one, when it comes to the attractive persons of the same sex. In this current study, I compared groups consisting of participants with high scores in narcissism (n = 24) and those with lower scores in narcissism (n = 24) to explore the possible effect of narcissism on the sexual attribution bias and on comparisons of self versus the others. I could not replicate the sexual attribution bias in any of the groups. The narcissism level did not have any effect on the attributions towards attractive same sex and opposite sex persons or the comparisons between these persons and the self.
Zusammenfassung

Appendix B

List of the Questionnaires Used in the Research Project

1) Demographical Information Questionnaire

2) SAB scales with the cover stories

3) Relationship Satisfaction, Partnership and Commitment Scales (PBC; Haselton & Gangestad, 2006)

4) Beck Depression Inventory II (BDI II; Hautzinger, Bailer, Worall, & Keller, 1995)

5) Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998)

6) Rejection Sensitivity Questionnaire (RSQ; Downey & Feldman, 1996)

7) Rosenberg Self-Esteem Scale (RSES; Roth, Decker, Herzberg, & Brähler, 2008)

8) Contingencies of Self-Worth Scale (CSWS; Schütz & Sellin, 2003)

9) Multidimensional Self-Esteem Scale (MSWS; Schütz & Sellin, 2006)

10) Self-Attractiveness Rating Scale (Haselton & Gangestad, 2006)

11) Multidimensional Jealousy Scale (MJS; Pfeiffer & Wong, 1989)

12) Two questions to assess upwards and downwards social comparison

13) Competence and Control Beliefs Questionnaire (FKK; Krampen, 1991)

14) Questionnaire for the Analysis of Motivational Schemata (FAMOS; Grosse Holtforth & Grawe, 2002)

15) Retest – SAB Scales with the cover stories

16) Scales for the Comparison of Stimulus Persons with the Self

17) The Revised Sociosexual Orientation Inventory (SOI-R; Penke & Asendorpf, 2008)

18) Childhood Trauma Questionnaire (CTQ, Bernstein & Fink, 1998)
Appendix C

Cover Stories

Appendix D

Eidesstattliche Erklärung

Hiermit versichere ich, dass ich die Diplomarbeit selbständig angefertigt, andere als die angegebenen Hilfsmittel und Quellen nicht benutzt und mich auch sonst keiner unerlaubten Hilfe bedient habe.

Ich versichere, dass ich dieses Diplomarbeitsthema bisher weder im In- noch im Ausland in irgendeiner Form als Prüfungsarbeit vorgelegt oder veröffentlicht habe.

___________________  ____________________
Ort, Datum                        Unterschrift
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