

# Gender Differences, Smiling, and Economic Negotiation Outcomes

**Paulina Hiersch, Gary McKeown, Ioana Latu, Magdalena Rychlowska**

University of Vienna, Queen's University Belfast, Queen's University Belfast, Queen's University Belfast,  
Universitätsring 1, 1010 Wien, Austria, David Keir Bldg, 18-30 Malone Rd, Belfast BT9 5BN, United Kingdom  
paulina@hauck-hiersch.de, {g.mckeown, i.latu, m.rychlowska}@qub.ac.uk

## Abstract

Research documents gender differences in nonverbal behavior and negotiation outcomes. Women tend to smile more often than men and men generally perform better in economic negotiation contexts. Among nonverbal behaviors, smiling can serve various social functions, from rewarding or appeasing others to conveying dominance, and could therefore be extremely useful in economic negotiations. However, smiling has hardly been studied in negotiation contexts. Here we examine links between smiling, gender, and negotiation outcomes. We analyze a corpus of video recordings of participant dyads during mock salary negotiations and test whether women smile more than men and if the amount of smiling can predict economic negotiation outcomes. Consistent with existing literature, women smiled more than men. There was no significant relationship between smiling and negotiation outcomes and gender did not predict negotiation performance. Exploratory analyses showed that expected negotiation outcomes, strongly correlated with actual outcomes, tended to be higher for men than for women. Implications for the gender pay gap and future research are discussed.

**Keywords:** smile, gender, negotiation

## 1. Introduction

A smile can say more than a thousand words. But what does it say about women, who tend to smile more often than men (Fischer and LaFrance, 2015; LaFrance et al., 2003)? Smiling is a powerful interactional signal with multiple functions, which can include rewarding another person, appeasing someone, or negotiating social hierarchies (Martin et al., 2017). However, little is known about the effects of smiles in economic negotiation and about the extent to which such effects are influenced by gender.

In general, women perform worse in negotiations than men (Mazei et al., 2015; Stuhlmacher and Walters, 1999), which is one of the explanations for the gender pay gap. In the European Union, women still earn on average 14.1% less than men (European Commission, 2018) and in the United Kingdom this number is as high as 15.5% (Office for National Statistics, 2020). Although the gender pay gap is likely influenced by various factors such as women's career choices and gender-based discrimination, examining women's performance in economic negotiations can provide further insights into the complexity of gender discrepancies in salaries.

Women's negotiation performance as well as their nonverbal behaviors have been interpreted in the light of power differences between the sexes (e.g., Henley, 1977; Miles and Clenney, 2010). In absence of other cues, men tend to be ascribed a higher social status than women (e.g., Dovidio et al., 1988). People with a higher status benefit from a higher perceived legitimacy of their actions (Amantullah and Tinsley, 2013) and can use a broader repertoire of behaviors without being exposed to social backlash (Rudman, 1998). As a consequence, men might be advantaged in bargaining situations as they are expected to be more competent. Conversely, women might be perceived as less competent and expected to perform less well in negotiations, which might turn into a self-fulfilling prophecy and influence women's verbal and nonverbal behavior during negotiation (Miles and Clenney, 2010). Smiling can be one of such behaviors. Specifically, because of their lower social status, women may smile more often than men to meet social expectations, relieve social tension, comply, and appease (Henley, 1977). Men, benefitting

from a higher social status, may feel less pressured to adhere to similar display rules for smiling.

Although gender differences in status, negotiation performance, and nonverbal behavior including smiling have been extensively investigated in previous research, they also tend to be examined separately, and studies that jointly examine these variables are scarce (Hall, 2006; Dovidio et al., 1988). The goal of the present research is to examine how gender, status, and the amount of smiling influence bargaining outcomes during mock salary negotiations. As mentioned earlier, meta-analyses show that negotiation outcomes are worse for women than for men (Mazei et al., 2015; Stuhlmacher and Walters, 1999), often leaving women at disadvantage regarding salaries, bonuses, or mortgage payments. However, this effect can be affected by many moderators. For example, women are more effective at the bargaining table when they negotiate on behalf of someone else, when they are more experienced, and when the situation and the potential outcomes are clearly structured (Mazei et al., 2015). Status and power also matter: When reminded of a past experience in which they felt powerful, women negotiate as well as men (Hong and van der Wijst, 2013). Having a higher status, as indicated by a higher organizational rank, can also reduce or eliminate gender differences (Amantullah and Tinsley, 2013). This effect can be explained by social role theory (Eagly, 1987) and status characteristics theory (Berger et al., 1977). According to both theories, assuming a specific social position creates expectations that influence the behavior of the person in this role. Although people automatically associate men with more powerful positions when no other cues are available (Miles and Clenney, 2010), manipulations related to power and status have the potential to improve women's negotiation performance.

This claim is supported by a recent study conducted by Pardal and colleagues (2020). Upon arrival, male and female participants underwent a sequential priming task as a measure of implicit gender stereotypes and were asked to estimate the percentage of men and women who are strong negotiators in the workplace to measure explicit stereotypes. They were then paired with another person and invited to conduct a mock negotiation in the context of an employment contract for the position of a marketing manager. Participants were randomly assigned to play the

(lower social status). During the negotiation, both participants received points for each item that they agreed on. Items included the salary, the signing bonus, vacation days, or the work location. The sum of points that each participant received served as a measure of their negotiation performance. All sessions were videotaped. The subsequent analysis revealed that women's negotiation performance was influenced by their role, the gender of their counterpart, and their counterpart's implicit and explicit stereotypes. Specifically, female candidates (lower status) performed significantly worse when their counterpart was male and high in implicit stereotypes. Conversely, female recruiters' (higher status) performance was lowest when their counterpart was lowest and held low explicit but high implicit stereotypes. These findings suggest that implicit biases have an important effect on women's performance at the bargaining table. They also highlight the importance of social status as a potential moderator of this relationship.

Although Pardal and colleagues (2020) collected rich audiovisual material on verbal and nonverbal behaviors during mock negotiations, this material was not analyzed up to date. An exploration of facial expressions, gestures and bodily postures during this study could provide insights into gender differences in negotiation outcomes. Implicit stereotypes are closely linked with nonverbal behavior (Dovidio et al., 2002). It is thus possible that participants' own, and their counterparts' biases influenced participants' nonverbal communication thereby shaping their negotiation performance. Such an interpretation dovetails with extant research showing that social status can be communicated via smiling and laughter. For example, Oveis and colleagues (2016) showed that powerful individuals laugh differently than those with less power, and that listeners are able to recognize this difference and assign social status accordingly. Smiles and laughs have also been described as flexible social signals serving to communicate reward, affiliation (or appeasement), and dominance (Martin et al., 2017) and it is possible that functions and forms of smiles covary with status. For example, subordination theory (Henley, 1977) argues that low-status individuals smile more than high-status individuals as a gesture of appeasement, theoretically congruent with the affiliative functions of smiles. Conversely, dominance smiles could be more frequent among high-status individuals. Up to date, findings on smiling and status are mixed, and it is unclear whether people smile more when they have more power or when they have less power (Cashdan, 1998; Dovidio et al., 1988; Hall, 2006; Hecht and LaFrance, 1998; Ketelaar et al., 2012).

Considerations of gender further complexify the picture, given that display rules for emotion expressions and gender role expectations are different for men and women. Specifically, men are more readily associated with anger and women are more associated with happiness and smiling (Becker, 2007). Men are also expected to feel and express emotions associated with power and competence, whereas women are stereotyped to display powerless emotions such as fear, sadness, and shame (Fischer and Evers, 2011; Fisher et al., 2013). Women who smile are perceived as more attractive whereas the opposite is true for men (Tracy and Beall, 2011).

In addition to being stereotyped as more likely to smile, women have indeed been found to smile and laugh more than men (Fischer and LaFrance, 2015, LaFrance et al., 2003). Importantly, this effect is moderated by power and status. For example, Hecht and LaFrance (1998) found that differences in smiling between men and women were more pronounced in contexts of equal power than in the context of a job interview involving a power discrepancy. However, a later meta-analysis performed by the same research team (LaFrance et al., 2003) points in the opposite direction. Specifically, gender differences in smiling tend to be reduced when women and men hold a similar status – for example, both are in a high position such as being the boss or the teacher, or when both are in a low position such as being the employee or the student.

Gender, status, and smiling appear to be closely linked. Smiling is more frequent among women and can be used to convey status or to negotiate social hierarchies. Thus, it may play an important role in bargaining situations, potentially influencing negotiation performance and outcomes. For this reason, the present study focuses on the role of smiling during negotiations and its relationship with gender and status. Specifically, we investigate how gender, status, and smiling affect negotiation outcomes. For this purpose, we analyze the recordings of mock salary negotiations from the study by Pardal and colleagues (2020), with a specific focus on gender, negotiation status (recruiter versus candidate), and the amount of smiling as potential predictors of negotiation outcomes. Exploratory analyses examined the ideal negotiation outcome reported by participants prior to the negotiation task.

We expected to replicate metanalytic findings that women smile more (Hypothesis 1), and that negotiation outcomes would be worse for women than for men (Hypothesis 2). We also examined whether the amount of smiling would be negatively correlated with negotiation performance (Hypothesis 3), and that negotiation status would not affect men's performance but female recruiters (higher status) would perform better than female candidates (lower status; Hypothesis 4).

## 2. Method

### 2.1 Participants

Subjects ( $N = 144$ , 40 male, 104 female) were students at an introductory psychology course at a U.S. university (Pardal et al., 2020). The collected data involved 72 dyads (46 same-gender, 26 mixed). However, videos of two participants were partly missing and 17 participants had to be excluded from further analyses either because their faces were not fully visible on the recordings, because of missing data, or because the dyad did not reach an agreement in the negotiation task. The final sample included data from 125 participants (32 male, 93 female).

### 2.2 Procedure

Details of the experiment are described in Pardal et al. (2020). Upon arrival, participants were informed that they would be participating in two different studies. The two parts of the study were completed in different rooms. In the first part of the study, participants completed a sequential priming task designed to measure implicit gender-negotiation stereotypes and a short survey assessing

explicit stereotypes. These measures are outside of the scope of the present study and will not be discussed further.

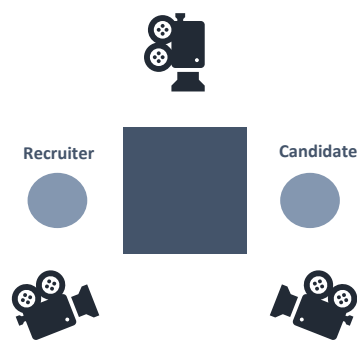


Figure 1: Layout of a negotiation session.

Participants then moved to another laboratory designed to look like a boardroom. They were matched with another person and invited to take part in a mock negotiation of an employment contract. Participants were then randomly assigned the role of either recruiter or candidate, a manipulation designed to operationalize social status. The candidate has just been hired as a marketing manager and was to negotiate for salary, signing bonus, vacation days, and location. Conversely, the recruiter has just hired the candidate and was instructed to negotiate in the interest of their company. Both participants were instructed to earn as many points as possible according to a specific matrix that they were advised not to share with one another. The matrix assigned a specific number of points to each possible outcome depending on the negotiation role. The dyad was then allowed 10 min to prepare the strategy. Right before starting the negotiation, participants reported their ideal negotiation outcome. The negotiation session was videotaped and Figure 1 displays the experimental setting. The task ended once the participants reached an agreement and signed a fictitious employment contract.

## 2.3 Measures

### 2.3.1 Actual and Ideal Negotiation Performance

Negotiation performance was operationalized by the sum of points that each participant received across the four negotiated items: salary, signing bonus, vacation days, and location. The outcome ranged from 0 to 2000 points for each person. The same range applied for the ideal negotiation outcome, reported by participants prior to the actual negotiation task.

### 2.3.2 Amount of Smiling

We used the software ELAN (Version 6.3, 2021, see Figure 2) to manually annotate smiling for each participant during the actual negotiation task. Annotations started when the experimenter left the room or when they explicitly told participants that the negotiation could begin. The end of negotiation was signaled with a handshake, by a verbal agreement, or by signing the contract.

After determining the beginning and the end of the negotiation for each dyad, the recording of this task was divided into 400ms intervals. For each of these intervals, we determined the intensity of smiling using a scale ranging from Level 0 (neutral, no smile) to Level 4 (most intense open-mouth smile), according to the procedure described by Gironzetti and colleagues (2016) and based on the Facial Action Coding System (FACS, Ekman and

Friesen, 1978). Figure 3 represents different levels of smile intensity annotated coding scheme. The present research focuses on the amount of smiling for each participant. To create a metric of how much recruiters and candidates smiled during the negotiation task, we divided, for each individual, the number of intervals with values higher than 0 (indicating the presence of a smile) by the total number of intervals comprising the task. This variable, henceforth named smiling score, represents the proportion of time that each participant spent smiling during the negotiation task.



Figure 2: Annotating smiles in ELAN.

In cases where participants' mouth or faces were covered (e.g., by a paper, their own head, or their negotiation partner) and when it was not possible to confidently determine whether they were smiling or not, the corresponding intervals were excluded from the calculation of the smiling score.

## 3. Results

Measures of negotiation performance and smiling were used to investigate how gender and negotiation role influence smiling and negotiation outcomes. On average, participants smiled during 44.53% of the negotiation task ( $SD = 0.24$ ) and reached an average negotiation outcome of 1231.44 points ( $SD = 371.15$ ).

We first examined how much time male and female participants spent smiling. Consistent with Hypothesis 1, women smiled more than men ( $M = 47.17\%$  of session time,  $SD = 0.25$  vs.  $M = 37.41\%$ ,  $SD = 0.19$ , respectively). A subsequent Welch's ANOVA showed that this difference was statistically significant,  $F(1,70) = 5.47, p = .022$ .

In line with the existing literature on the gender gap and men's and women's negotiation skills, we expected that, compared to male participants, women would earn less points in the negotiation task (Hypothesis 2). However, the number of points earned by men was only slightly higher than the number of points earned by women ( $M = 1271.31$ ,  $SD = 318.82$  vs.  $M = 1217.71$ ,  $SD = 389.46$ ), and this difference was not statistically significant,  $F(1, 65) = 0.597, p = .442$ .

Hypothesis 3 predicted that, for female participants, the amount of smiling would be associated with lower negotiation outcomes. We examined correlations between the smiling score and the negotiation outcomes separately for both genders. Neither of the two correlations was significant,  $r(91) = .026, p = .807$  for female participants

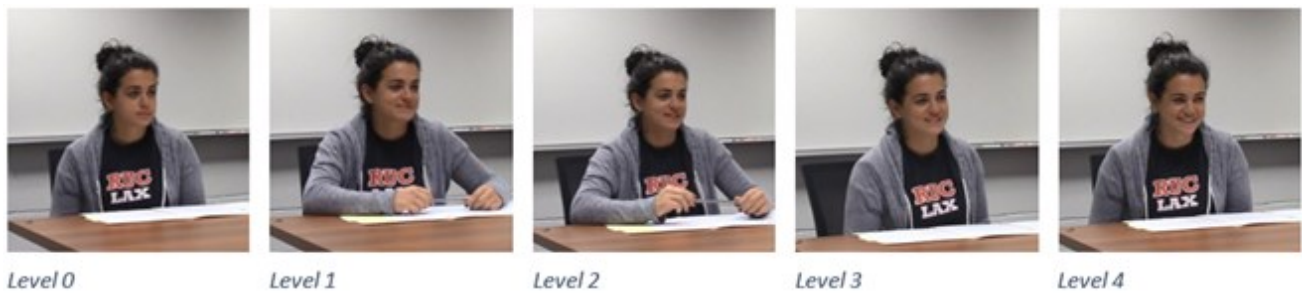


Figure 3 : Different levels of smile intensity and the corresponding annotations.

and  $r(30) = .001, p = .995$  for male participants.

Finally, Hypothesis 4 predicted that the negotiation role, manipulated as a proxy for social status would affect women's, but not men's negotiation performance. Specifically, we expected female recruiters, assigned a higher-status role, to perform better than female candidates, who negotiated in a lower-status role. This hypothesis was not supported by the data: an analysis of variance examining negotiation outcomes as a function of negotiation role, gender, and their interaction revealed no significant interaction effect,  $F(1,121) = 1.948, p = .165$ . The main effect of negotiation role and the main effect of gender were also not significant,  $F(1,121) = 1.292, p = .258$ , and  $F(1,121) = 1.122, p = .148$ , respectively.

In addition to testing Hypotheses 1-4, we explored the ideal negotiation outcome reported by participants prior to the main negotiation task. This measure was significantly and positively correlated with the actual negotiation outcome,  $r(120) = .725, p < .001$ . Ideal negotiation outcome also tended to be lower among women ( $M = 1116.48, SD = 377.72$ ) than men ( $M = 1233.87, SD = 299.27$ ), but failed to reach conventional levels of significance,  $F(1,65) = 3.092, p = 0.083$ .

#### 4. Discussion

The aim of the current study was to examine how nonverbal communication, in particular smiling, contributes to men's and women's performance in economic negotiations. We analyzed a corpus of video recordings of mock salary negotiations collected for the needs of a previous study (Pardal et al., 2020). In addition to examining how gender and negotiation status influenced participants' negotiation outcomes, we annotated and measured the amount of smiling displayed by male and female participants.

Our analyses showed that women smiled more than men. This finding is congruent with a large body of evidence showing that women are expected to smile more than men (e.g., Becker, 2007; Tracy and Beall, 2011) and that they indeed smile and laugh more frequently than their male counterparts (Fischer and LaFrance, 2015; LaFrance et al. 2003).

The amount of smiling did not predict negotiation outcomes, neither for female nor for male participants. Although this finding may appear surprising, it dovetails with somewhat mixed results on smiling in interaction. Although smiling people are perceived as competent, dominant, and having a high social status (e.g., Knutson, 1996; Senior et al., 1999), smiles are also displayed when expressers are uncomfortable (e.g., Ekman et al., 1988). In such contexts, smiles may serve to mask negative feelings

or to meet social norms. Women are often expected to smile and are portrayed to be more affiliative than men (Hess et al., 2005). Functions and forms of smiles vary, with some smiles expressing happiness, and others appeasement or dominance (Martin et al., 2017). It is thus possible that the mere quantification of the amount of smiling does not reflect the complexity of smiles displayed during mock negotiation. Future research should include more nuanced measures of smiling, such as the patterns of smiling, smiling intensity, or types of smiles (Martin et al., 2017). Another possibility is that, given the relatively artificial setting of the mock negotiation task used in the present research, participants mostly displayed polite smiles to acknowledge their counterparts or to mask feelings of awkwardness. Future analyses of this dataset could examine the form of smiles displayed by participants and combine it with measures of participants' engagement in the negotiation task – for example time of the negotiation or the amount of conversations between the recruiter and the candidate.

Unexpectedly, women's negotiation outcomes were comparable to men's. It is possible that through negotiation training and societal changes in the last years, women have already been able to enhance their skills. However, it is also important to note that our negotiation task did not use real-life incentives and our sample consisted of students with little or no experience in negotiating, thereby limiting the generalizability of our results. The instructions of the task and its design to assign point values were designed to motivate and engage participants to behave as closely as possible to their assigned roles. Nevertheless, behaviors may differ in real-life settings. Another limitation is that our sample included 104 women and only 40 men, potentially lacking power for meaningful comparisons between the two genders (Simmons et al., 2018). Finally, neither the negotiation role nor the interaction between negotiation role and gender did influence participant's outcomes. Additional measures of the extent to which the recruiter and the candidate felt powerful – or were perceived as such – could provide more insights into this null finding.

Finally, our results suggest that, compared to men, women tend to expect less from their negotiations. Given that expected negotiation outcome is strongly and positively correlated with the actual outcomes, low expectations could act as self-fulfilling prophecies and negatively affect their bargaining performance. Future research should include measures of negotiation expectations to further explore this potential connection.

To summarize, we show that, in a mock negotiation task, women smile more than men and they tend to have lower

expectations about their negotiation performance, a measure which is correlated with the actual negotiation outcomes. The present report documents first steps of the research project. Further analyses will examine the effects of gender, negotiation role, status, and dyad composition using the Actor-Partner Interdependence Model (Cook and Kenny, 2005), a statistical framework more appropriate for dyadic data. Another analysis of interest focuses on the relationship between gender, smile synchrony, and negotiation outcomes.

## 5. Bibliographical References

- Amanatullah, E. T., & Tinsley, C. H. (2013). Ask and ye shall receive? How gender and status moderate negotiation success. *Negotiation and conflict management research*, 6(4): 253–272.
- Becker, D. V., Kenrick, D. T., Neuberg, S. L., Blackwell, K. C., & Smith, D. M. (2007). The confounded nature of angry men and happy women. *Journal of Personality and Social Psychology*, 92(2): 179–190.
- Berger, J., Fisek, M. H., Norman, R. Z., & Zelditch, M. (1977). Status characteristics and social interaction: An expected states approach. New York, NY: Elsevier.
- Cashdan, E. (1998). Smiles, speech, and body posture: How women and men display sociometric status and power. *Journal of Nonverbal Behavior*, 22(4): 209–228.
- Cook, W. L., & Kenny, D. A. (2005). The actor-partner interdependence model: A model of bidirectional effects in developmental studies. *International Journal of Behavioral Development*, 29: 101–109.
- Dovidio, J. F., Heltman, K., Keating, C. F., Brown, C. E., & Ellyson, S. L. (1988). Power displays between women and men in discussions of gender-linked tasks: A multichannel study. *Journal of Personality and Social Psychology*, 55(4): 580–587.
- Dovidio, J., Kawakami, K., & Gaertner, S. (2002). Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology*, 82(1), 62–68. <https://doi.org/10.1037/0022-3514.82.1.62>
- Eagly, A. H. (1987). Sex differences in social behavior: A social-role interpretation. Hillsdale, NJ: Erlbaum.
- Ekman, P., Friesen, W., & O'Sullivan, M. (1988). Smiles when lying. *Journal of Personality and Social Psychology*, 54(3): 414–420.
- ELAN (Version 6.3) [Computer software]. (2022). Nijmegen: Max Planck Institute for Psycholinguistics, The Language Archive. Retrieved from <https://archive.mpi.nl/tla/elan>
- Fischer, A. H., & Evers, C. (2011). The social costs and benefits of anger as a function of gender and relationship context. *Sex Roles*, 65: 23–34.
- Fischer, A., & LaFrance, M. (2015). What drives the smile and the tear: Why women are more emotionally expressive than men. *Emotion Review*, 7: 22–9.
- Gironzetti, E., S. Attardo, & L. Pickering (2016). Smiling, Gaze, and Humor in Conversation: A Pilot Study. In Ruiz-Gurillo, L. (ed.), *Metapragmatics of Humor: Current Research Trends* (235–254). Amsterdam: John Benjamins.
- Hall, J.A. (2006). Nonverbal behavior, status, and gender: How do we understand their relations? *Psychology of Women Quarterly*, 30: 384–391.
- Hecht, M. A., & LaFrance, M. (1998). License or obligation to smile: The effect of power and sex on amount and type of smiling. *Personality & Social Psychology Bulletin*, 24(12): 1332–1342.
- Henley, N. M. (1977). Body politics: Power, sex, and nonverbal communication. Englewood Cliffs, NJ: Prentice-Hall.
- Hess, U., Adams, R., & Kleck, R. (2005). Who may frown and who should smile? Dominance, affiliation, and the display of happiness and anger. *Cognition & Emotion*, 19(4): 515–536.
- Hong, A.P.C.I., & Van der Wijst, P.J. (2013). Women in negotiation: Effects of gender and power on negotiation behavior. *Negotiation and Conflict Management Research*, 6(4): 273–284.
- Ketelaar, T., Koenig, B. L., Gambacorta, D., Dolgov, I., Hor, D., Zarzosa, J., Cuauhtémoc L.-N., Klungle, M., & Wells, L. (2012). Smiles as signals of lower status in football players and fashion models: Evidence that smiles are associated with lower dominance and lower prestige. *Evolutionary Psychology*, 10(3): 371–397.
- Knutson, B. (1996). Facial expressions of emotion influence interpersonal trait inferences. *Journal of Nonverbal Behavior*, 20(3): 165–182.
- LaFrance, M. Hecht, M.A., & Paluck, E.L. (2003). The contingent smile: A meta-analysis of sex differences in smiling. *Psychological Bulletin*, 2: 305–334.
- Martin, J., Rychlowska, M., Wood, A., & Niedenthal, P. (2017). Smiles as multipurpose social signals. *Trends In Cognitive Sciences*, 21(11): 864–877.
- Mazei, J., Hüffmeier, J., Freund, P. A., Stuhlmacher, A. F., Bilke, L., & Hertel, G. (2015). A meta-analysis on gender differences in negotiation outcomes and their moderators. *Psychological Bulletin*, 141: 85–104.
- Miles, E.W., & Clenney, E. F. (2010). Gender differences in negotiation: A status characteristics theory view. *Negotiation and Conflict Management Research*, 3: 130–144.
- Oveis, C., Spectre, A., Smith, P. K., Liu, M. Y., & Keltner, D. (2016). Laughter conveys status. *Journal of Experimental Social Psychology*, 65: 109–115.
- Pardal, V., Alger, M., & Latu, I. (2020). Implicit and explicit gender stereotypes at the bargaining table: Male counterparts' stereotypes predict women's lower performance in dyadic face-to-face negotiations. *Sex Roles*, 83: 289–302.
- Rudman, L. A. (1998). Self-promotion as a risk factor for women: The costs and benefits of counterstereotypical impression management. *Journal of Personality and Social Psychology*, 74: 629–645.
- Senior, C., Phillips, M., Barnes, J., & David, A. (1999). An investigation into the perception of dominance from schematic faces: A study using the World-Wide Web. *Behavior Research Methods, Instruments, & Computers*, 31(2): 341–346.
- Simmons, J., Nelson, L., & Simonsohn, U. (2018). False-Positive Citations. *Perspectives on Psychological Science*, 13(2): 255–259.
- Stuhlmacher, A. F., & Walters, A. E. (1999). Gender differences in negotiation outcome: A meta-analysis. *Personnel Psychology*, 52: 653–677.
- Tracy, J. L., & Beall, A. T. (2011). Happy guys finish last: The impact of emotion expressions on sexual attraction. *Emotion*, 11(6): 1379–1387.