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Running head: VISUAL CONTACT AND EYE CONTACT IN NEGOTIATIONS

Sex Differences in the Effects of Visual Contact and Eye Contact in Negotiations

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### Abstract

Previous research has proposed that the ability to see others would benefit negotiations. We argue that this view is too narrow and that the impact of visual contact on negotiated agreements depends on the meaning individuals ascribe to either its presence or absence. Based on previous research showing that females are more likely to understand others in the presence of visual contact while males understand others better in the absence of visual contact, we explore how visual contact, eye contact, and sex affect the quality of negotiated agreements in a meta-analysis (Study 1) and a laboratory experiment (Study 2). The two studies combined show that because direct communication via the face facilitates a shared understanding for two unacquainted females, their agreements are of higher quality when they have visual contact compared to when they do not (Study 1), and if they have visual contact, their agreements are better when they have eye contact than when they do not (Study 2). Because communication via the face increases discomfort between two unacquainted males, their agreements are of higher quality when they do not have visual contact (Study 1), and if they do have visual contact, their agreements are better when they have no eye contact than when they do (Study 2).

**KEYWORDS:** Visual contact, eye contact, sex differences, negotiation

### Sex Differences in the Effects of Visual Contact and Eye Contact in Negotiations

How negotiated agreements are affected by the mere opportunity to see others is a key question to communication scholars and psychologists, and important to address because negotiators usually have some form of visual contact with each other. Interestingly, the majority of the research in this area is concerned with studies of the direct impact of visual contact and ignores the idea that this type of contact may have a different meaning for different individuals and different sexes. This lack of attention is unfortunate because the meaning of visual contact may be intimately related with negotiators' ability to understand others and obtain high quality agreements. If one feels that visual contact facilitates an understanding of others, its presence should increase the quality of negotiated agreements. Conversely, when visual contact is merely perceived as a roadblock to agreement, its absence may be more beneficial. So, the question to answer is whether the meaning of visual contact differs across individuals and how this affects the quality of negotiated agreements.

It is often assumed that the ability to see others has merit. The added value of visual contact is acknowledged, for example, in the familiar wisdom that out of sight implies out of mind. Along these lines, media richness theory postulated that communication settings can be classified along a continuum of richness, where richness is based on the ability of communication media to provide rapid feedback and carry visual or vocal information exchange (Daft & Lengel, 1986). The theory claims that –compared to telephone or email conversations- communication settings that enable visual contact (e.g. face-to-face or videoconferencing) allow people to communicate more quickly and better understand ambiguous or equivocal messages and, therefore, increase their performance in complex tasks like negotiations (McGrath & Hollingshead, 1993). But empirical evidence for this hypothesis is mixed. While some studies found visual contact to increase the quality of negotiated agreements (Turnbull, Strickland, & Shaver, 1976), others have shown the exact

opposite (Carnevale, Pruitt, & Seilheimer, 1981). What, then, can explain these contradicting findings?

Contrary to the media richness approach, we propose that visual contact can enhance the quality of negotiated agreements but only when negotiators feel it helps them to understand others. To examine this hypothesis, we invoke the cross-cultural research asserting that context can afford the same form of communication (i.e. visual contact) different meanings (Bornstein, 1995). For instance, eye contact between a mother and child is considered to be a foundation for interpersonal understanding and social relationships in most Anglo-Saxon cultures (Andersen, 2008; Trevarthen, 1985) but is seldom used in interactions between Mexican Mayan Indian mothers and their children (Brazelton, 1977). Similarly, members of some Arab and native Indian cultures are taught that avoiding eye contact is a gesture of respect whereas members of Northern European cultures would interpret the same act as a sign of dishonesty and insincerity (Argyle & Cook, 1976). So, the impact of visual contact on negotiations may be contextually regulated such that it is moderated by the meaning it has to an individual.

Although the idea that similar communication media signify different meaning in different contexts received some attention (Fulk, 1993; Markus, 1994), it has never been tested directly or applied to the domain of negotiations. The aforementioned research suggests that when visual contact facilitates understanding between negotiators, its presence can increase the quality of an agreement. But when visual contact is experienced as an obstacle to the conversation, its absence may paradoxically facilitate negotiators' understanding of each other and produce higher quality agreements. In order to examine this hypothesis, we focus on the moderating impact of sex because prior research has demonstrated that females and males ascribe different meanings to visual contact (Hyde, 2005).

*The Moderating Role of Sex*

Females in Western societies are more comfortable with visual contact than males. For example, females tend to communicate in a style in which the primary purpose is to discuss and understand others' perspectives (Troemel-Ploetz, 1991) and the presence of visual contact can help them to do so more effectively (Dennis, Kinney, & Caisey Hung, 1999). As a result, it will be easier for females to understand others when they can see others compared to when they cannot. This has implications for negotiations because a better understanding of others positively influences the quality of negotiated agreements (Galinsky, Maddux, Gilin, & White, 2008; Swaab, Postmes, Van Beest, & Spears, 2007). So, because visual contact is important in building a shared understanding among females, its *presence* should help them to achieve higher quality agreements. This hypothesis corresponds with findings showing that compared to males, females communicate more clearly in the presence of visual contact (Briton & Hall, 1995; Burgoon & Dillman, 1995; Spangler, 1995) and are better at understanding nonverbal communication (Kette & Konečni, 1995; LaFrance & Henley, 1994).

By contrast, males in Western societies are less comfortable with visual contact. For example, it is common for two unacquainted males to adopt a communication style in which the goal is to win the discussion (Tannen, 1990). Because visual contact can highlight these competitive intentions (Dennis et al., 1999), males may be less distracted when visual contact is absent. So, because males are less comfortable with visual contact, its *absence* should help them to achieve a better understanding of the counterpart, and higher quality agreements as a result. This hypothesis is consistent with findings showing that males perceive eye contact as more threatening than females (Dalton, Nacewicz, Johnstone, Schaefer, Gernsbacher, Goldsmith, Alexander, & Davidson, 2005) and that males feel the loss of visual contact to a lesser extent than females (Furumo & Pearson, 2007).

But whether different meanings associated with visual contact materialize in a negotiation also depends on whether these meanings are shared. Cross-cultural research shows that the impact of communication forms on social interactions are more pronounced when the meaning associated to its presence (or absence) is shared among communicators (Bornstein, 1995). This implies that the *presence* of visual contact can contribute to an increased understanding of others and higher quality agreements but only when the negotiation is held between two females and not when the negotiation is between two males or a female and a male. This idea corresponds with findings that levels of eye contact are higher between two conversing females than interactions between two males or between a female and a male (Mulac, Studley, Wiemann, & Bradac, 1987).

Furthermore, the above implies that the *absence* of visual contact can also increase the quality of agreements but only when the negotiation is held between two males and not when it is held between two females or a male and a female. In other words, the absence of visual contact paves the way for two males to come to a better understanding without being distracted by the counterpart. This hypothesis corroborates with the finding that males interpret visual contact as threatening but only when they interact with males and not when they interact with females (Dalton et al., 2005) and that the lowest levels of mutual gazing occur in male-male conversations (Mulac et al., 1987). We explore these hypotheses for the impact of visual contact in a meta-analysis and for the impact of eye contact in a laboratory experiment.

### Study 1

Study 1 examines the effect of visual contact on the quality of negotiated agreements and the moderating impact of sex by meta-analyzing comparisons between communication settings that enable visual contact with those that do not.

#### *Literature Search & Criteria for Inclusion*



Literature searches were conducted to retrieve data on the impact of visual contact on the quality of agreements. Manuscripts (until December, 2006) were retrieved from theoretical reviews and integrations and through computer searches using PsycINFO.<sup>1</sup> All studies in our sample were conducted with participants from Western cultures.

After collection, the studies were individually examined and included if they compared communication settings that enabled visual contact with those that did not. We included studies that made it possible to unravel the impact of visual contact on agreement quality. For example, some studies compared face-to-face negotiations with face-to-face negotiations in which a barrier was placed between parties (Carnevale & Isen, 1986) while others compared webcam negotiations with phone negotiations (Purdy, Nye, & Balakrishnan, 2000). Studies that did not report a number of females or males were excluded from the sample (e.g. Drolet & Morris, 2000).

We only included comparisons where negotiators were *not* manipulated to have high concern for their counterpart's outcomes because this variable was not central to our hypothesis and previous research already demonstrated that increased concern for others can reduce the impact of communication media (Morris, Nadler, Kurtzberg, & Thompson, 2002; Thompson & Nadler, 2002). Because our focus was on dyadic (instead of individual) outcomes, we only included studies that reported a measure of the quality of the negotiated agreement. Table 1 presents an overview of the different studies included in each meta-analysis, their key attributes, and the percentage of females in the study as a proxy for the sex composition of the dyad.

#### *Coding Scheme and Analysis*

The quality of the negotiation agreement was operationalized by including measures of the negotiation outcome. For multi-issue negotiations, we included a measure of joint profit because this is a good indicator of the quality of agreements (Pruitt & Carnevale, 1993). In single-issue negotiations where any agreement between parties would be better than no agreement, the outcome was simply operationalized as negotiators' ability to form a deal. Because some of these were

multi-study papers or allowed for multiple comparisons, we were able to extract a total of 12 effect sizes. Some effect sizes in the meta-analysis included overlapping samples because they were based on a common control group. For example, the papers by Purdy et al (2000), Short (1974), and Turnbull et al (1976), offered each two effect sizes because an audio-only condition was compared with both a face-to-face condition and a videoconferencing condition. This partial non-independence is noted in Table 1.

The studies in our sample did not allow us to code separate effect sizes for different sexes because none of the articles provided such information. Because data about sex composition of negotiating groups was missing in most papers, we used the percentage of females in the study as an approximation of sex. Two papers controlled for the dyad's sex composition (McGinn & Keros, 2002; Turnbull et al., 1976) but did not report separate analyses for same sex female, same sex male, or mixed sex dyads. Nevertheless, we included a variable to examine if studies using same sex dyads differed from those that did not. Because visual contact was manipulated differently across the studies in our sample, we also examined whether studies manipulating visual contact in face-to-face settings differed from those manipulating visual contact in videoconferencing settings.

We used a meta-analytic approach to examine the impact of visual contact on negotiated agreements in 12 effect sizes. Effect sizes were weighted such that studies with larger samples carried more weight in the analyses. We coded effect sizes so that as the weighted effect size Cohen's  $d_w$  gets larger, the effect that visual contact has on the quality of the negotiated agreement gets stronger. An effect size Cohen's  $d_w$  of .20 is considered small, .50 as medium, and .80 as large.

### *Results*

The total sample included an N of 12 effect sizes (comprising 836 negotiators and 418 dyads). In order to test the hypothesis that the absence of visual contact improved agreement quality for males and that the reverse is true for females, we conducted two separate analyses. To test whether the absence of visual contact improved agreement quality for males, we calculated the

mean weighted effect size for studies with same sex male dyads (i.e. the zero percent female studies). Strong support was found for our hypothesis: visual contact deteriorated the quality of negotiated agreements,  $d_w = -1.02$ ,  $Z = -11.32$ ,  $p < .001$ . In other words, the quality of agreements was higher for males when they communicated with audio only (i.e. when visual contact was absent).

Unfortunately, we could not test whether the presence of visual contact improved agreement quality among same sex female dyads because no studies were conducted with females only. Instead, we could only test whether the effect of visual contact was more positive as the likelihood that two females interacted increased (i.e. studies with higher female proportions). We included all studies in our regression model to examine how the percentage of females moderates the impact of visual contact. As recommended by guidelines (Lipsey & Wilson, 2001), we used a random effects model because this assumes that the variability between effect sizes is due to sampling error as well as variability in the different populations. The results show that visual contact had a more positive impact on agreement quality as there were more females in the study,  $\beta = .61$ ,  $Z = 3.13$ ,  $p < .01$ ,  $R^2 = .37$  (see Figure 1). Interestingly, not a single study with more than 50 percent females reported a negative effect size. This effect did not change after entering both control variables to the equation,  $\beta = .47$ ,  $Z = 1.94$ ,  $p = .05$ ,  $R^2 = .35$ . That is, neither the dyad's sex composition (controlled for vs. not controlled for) nor the type of manipulation of visual contact (face-to-face vs. videoconferencing) moderated this effect ( $\beta = -.16$ ,  $p = .52$  and  $\beta = .13$ ,  $p = .61$ , respectively).

### *Discussion*

We found support for the hypothesis that the quality of negotiated agreements would be higher when visual contact between two male negotiators was absent. This finding corroborates with the idea that visual contact is perceived as an obstacle to a negotiation between two males. Unfortunately, the meta-analysis did not allow us to test whether the

reverse was true for females. Although we found some evidence of a more positive impact of visual contact when there were more females in the study, no studies were conducted with females only or reported separate effects for same sex female dyads. As a result, we could not tell whether studies reporting a positive impact of visual contact were due to negotiations between two females or between a female and a male. Therefore, we designed a second study that directly manipulates the dyad's sex composition.

An additional study would also allow us to exercise control over the manipulation of visual contact. The meta-analysis did not allow us to control for the amount of nonverbal communication exchanged because we included studies that compared face-to-face or videoconferences with audio-only negotiations. In order to test whether context affords the same form of visual contact different meaning, it would be more accurate to manipulate a specific *form* of visual contact while keeping the amount of nonverbal communication constant. One form of visual contact that allows us to test this and also likely to differ in meaning to both sexes, is eye contact (Kleinke, 1986). That is, it has been suggested that the *presence* of eye contact facilitates understanding among two females while the *absence* of eye contact does so among two males (Andersen, 2008). This idea corresponds with findings showing that gazing occurs most frequently in interactions between two females and least frequently between two males (Mulac et al., 1987). So, we propose that the presence of eye contact should increase the quality of agreements in negotiations among two females whereas its absence should positively impact agreements between two males.

In addition to exercising control over the independent variables, our second study also aims to study the process underlying the effects on the negotiated agreement. Previous insights suggest that shared meanings of communication forms increase peoples' understanding of each other (Bornstein, 1995). An increased and shared understanding could then be responsible for shifts in the quality of the negotiated agreement. This idea is

consistent with previous findings showing that a shared understanding between negotiators increases mutually beneficial negotiation outcomes (Galinsky et al., 2008; Swaab et al., 2007). Study 2 manipulates eye contact and sex composition and measures the process underlying their effect on agreement quality.

## Study 2

### *Method*

*Participants, design & procedure.* One-hundred and eighty undergraduate students (92 females and 88 males) of a Dutch University participated for a monetary reward. Participants always interacted with someone they did not know and were not instructed to have high concern for the other party. They were assigned to 90 negotiating dyads, which were randomly assigned to experimental conditions. Eye contact and sex composition were independently manipulated in a 2 (eye contact: present vs. absent) by 3 (sex composition: female only dyad vs. male only dyad vs. mixed sexes dyad) factorial design.

We manipulated eye contact by having participants communicate via a special videoconferencing device. In the eye contact condition, the camera was placed behind a semitransparent mirror, allowing both participants to look each other in the face and make eye contact, as would be the case in a face-to-face conversation (see Figure 2a and b). The no eye contact condition was essentially similar to a regular videoconference. Although participants communicated with exactly the same device and could see each others' faces, the system did not allow them to make eye contact because we shifted the angle of the camera (see Figure 3a and b).

During the negotiation, participants played representatives of advertising agencies who were in negotiation about several issues. This task was a modified version of an existing integrative negotiation task developed by Thompson (1991). Just like the negotiations within the meta-analytic sample, this negotiation allowed participants to trade-off issues that were of

less importance to themselves (and of more importance to the other) with those of higher importance (and of less importance to the other). This integrative potential allowed people to negotiate high quality agreements that benefited themselves as well as the other. Negotiators could score points for agreeing certain outcomes (budget, movie, genre, extra, exposure, director, time) with each other. If no agreement was reached, no points would be awarded. The payoff matrix was constructed in such a way that a high quality, mutually beneficial agreement (where each party compromised on dimensions that were least important to them) yielded the highest scores. After a maximum of 20 minutes (pilot data showed that the negotiation took an average of 15 minutes to complete), negotiations were terminated and participants were asked to complete a questionnaire.

*Dependent variables.* When negotiations ended, we first measured negotiators' perceptions of a shared understanding of the communication process with the counterpart. In order to do so, we adapted an existing scale that included the following items "negotiating parties' share a common viewpoint which also comprises individual points of view" and "negotiating parties took other's interests into account in developing a point of view" (Yoo & Kanawattanachai, 2001).

After measuring their perceptions of understanding, participants entered the total amount of points they gathered from the negotiation. Their outcomes were double checked and averaged at the dyadic level so that higher scores would indicate agreements of higher quality. However, impasses and partial agreements (i.e. where negotiators only reached agreement on a subset of the issues) yield substantially lower points than any agreement based on all issues. To rule out the possibility that differences in agreement quality would be driven by these low outcomes, we replaced the impasse-value of zero and partial agreements with the lowest outcome achieved by a dyad in which an agreement was reached on all issues

(see Pruitt, 1981 for a discussion). In our analyses, we report both the uncorrected and corrected measure for agreement quality (see Table 2).

### *Results*

Regular ANOVA was used to examine our hypotheses. We found partial support for our hypothesis regarding negotiators' understanding. Female dyads in the eye contact condition and male dyads in the no eye contact condition reported higher scores on the shared understanding measure than dyads in all other conditions,  $F(5, 84) = 3.39, p = .04, \eta^2 = .08$ . No main effects were significant. The post-hoc analyses in Table 2 reveal that two females making eye contact or two males making no eye contact understand each other better than two males or a mixed dyad making eye contact but not better than female or mixed dyads making no eye contact. No differences were found between females' and males' understanding within the mixed sex conditions.

Analyses of the uncorrected quality of the negotiated agreement did not support our hypothesis. Although there was a trend that female dyads in the eye contact condition and male dyads in the no eye contact condition obtained higher outcomes than dyads in all other conditions, this was not significant,  $F(5, 84) = 2.10, p = .13, \eta^2 = .05$ . No main effects were significant. The post-hoc analyses in Table 2 reveal that the quality of agreement was highest in the same sex female eye contact condition and the same sex male no eye contact condition. However, these conditions did not differ significantly from all other conditions. Individual outcomes for females and males within the mixed sex conditions did not differ.

Strong support was found for our hypothesis using the corrected measure of agreement quality,  $F(5, 84) = 7.79, p < .001, \eta^2 = .16$ . No significant main effects were found. The post-hoc analyses in Table 2 reveal that the female eye contact condition led to higher quality agreements than the female no eye contact condition and the two other eye contact conditions (male and mixed). Vice versa, males in the no eye contact condition

reached higher quality agreements than male dyads or mixed dyads in the eye contact condition and the female no eye contact conditions. Furthermore, the outcomes of mixed dyads mirrored those of the same sex male dyads. Individual outcomes for females and males within the mixed sex conditions did not differ.<sup>ii</sup>

### *Discussion*

Study 2 considerably refined the results of Study 1 because it manipulated a specific form of visual contact as well as the dyad's sex composition. Our hypotheses were supported. Because the *presence* of eye contact increases a shared understanding for females (Dennis et al., 1999; Troemel-Ploetz, 1991), it was easier for them to obtain higher quality agreements when eye contact was available than when it was not. However, because it is easier for two males to develop a shared understanding without eye contact (Dalton et al., 2005; Tannen, 1990), the absence of eye contact facilitated higher agreements for them. No differences were found for the individual outcomes for females and males in the mixed sex dyads, indicating that females did not outperform males or vice versa.

### General Discussion

#### *Implications*

The results of two studies demonstrate an intimate link between the meaning associated to the presence or absence of visual contact and the quality of negotiated agreements. Together they show that the same form of visual contact –and eye contact in particular- can signify different meaning for different individuals. This finding helps to explain the mixed literature findings regarding the impact of visual contact on negotiated agreements. Because visual contact and eye contact are important in building a shared understanding among two females, their *presence* helped them to achieve a higher quality agreement. However, because visual contact and eye contact can be an obstacle for two unacquainted males, their *absence* helped them to achieve a better understanding and



agreement. These results are consistent with findings from cross cultural psychology showing that context may provide the same form of communication different meaning and has a particularly strong impact on social interactions when this meaning is shared among communicators (Bornstein, 1995). The results are also consistent with recent approaches to sex differences in negotiations that start with the premise that gender effects in negotiations arise under certain circumstances and can be absent –or even reversed- in others (see for example Bowles, Babcock, & McGinn, 2005).

At this point it might also be interesting to speculate about the roots for our findings. Although much research attributes sex differences in nonverbal communication to socialization (Eagly, 1987), recent insights suggest that this view might be complemented by neurobiological explanations. For example, it has been observed that female neonates look more at faces compared to male neonates (Connellan, Baron-Cohen, Wheelwright, Batki, & Ahluwalia, 2000). Also, female infants look more at a human face on their first day of life whereas male infants look more at the mechanical mobile suspended above them (Connellan et al., 2000). Moreover, it has been found that higher prenatal testosterone levels diminish the amount of eye contact a child would make years later (Baron-Cohen, Knickmeyer, & Belmonte, 2005). This all indicates the importance of early, intrauterine, programming. Also, the observation that eye contact increases testosterone levels and amygdala activity (Dalton et al., 2005), while higher levels of testosterone are a characteristic of adult males, may help to explain why visual contact can be dysfunctional in interactions among unacquainted males. The relative contribution of sex differences in fetal and adult sex hormone levels can be studied by running similar experiments in individuals with disorders that are accompanied by abnormal hormone levels in either the fetal period or in adulthood (Swaab, 2007).

Differences in the meaning associated to visual contact may also originate from factors other than sex differences (Chevalier-Skolnikoff, 2006). Although controlled for in

our second study, the ability to utilize eye contact may stem from experience (Ekman, 2006). For example, it has been shown that people are less strongly influenced by visual contact when they have high concern for others, for example because they had a positive experience with their counterpart (Morris et al., 2002). Also, one's ability to utilize visual contact may be affected by external stimuli like cultural norms (Andersen, 2008). For example, Japanese focus more strongly on the eyes than on the mouth when interpreting others' emotions while the opposite is true for Americans (Yuki, Maddux, & Masuda, 2007). Recent studies suggest that these cultural norms can be transferred to others, including primates. For example, it was found that visual contact functions as a means to build rapport among Japanese chimpanzees but not among American chimpanzees. It has been suggested that somehow the trainers conveyed their cultural norms to the chimps that the eyes should be used to infer rapport or not (Bard, Myowa-Yamakoshi, Tomonaga, Tanaka, Costall, & Matsuzawa, 2005). So, our finding that sex differences can shape the impact of visual contact on negotiations between strangers does not mean that these effects are unconditional.

#### *Limitations and Practical Implications*

Although the present research shows that visual contact may influence the ease by which people come to understand others and achieve high quality agreements, we did not measure the content of the meaning associated to visual contact for both sexes. Instead, we based our predictions on previous findings outside the negotiation literature showing that visual contact can increase comfort among females because it helps them to understand others (Dennis et al., 1999; Troemel-Ploetz, 1991) and decrease comfort among males because it highlights competition (Dalton et al., 2005; Tannen, 1990). Although we did not measure competitive emotions, it is likely that these are responsible for the shifts in agreement quality because people in Western societies are more likely to define negotiations as an opportunity to compete with others (Brett, 2007). This idea may also help explain why

the outcomes of mixed sex dyads mirrored those of the male dyads. That is, if visual contact is associated with increased competition among males, then the presence of a single male in the mixed sex condition was already sufficient to establish a competitive discussion. This is consistent with previous insights showing that the presence of one competitor in a conversation is enough to create escalating cycles of competition at the expense of high quality agreements (Kelley & Stahelski, 1970a; Kelley & Stahelski, 1970b). This implies that females in the mixed sex eye contact condition may have been more competitive in response to their male counterpart which, in turn, decreased both their outcomes. And because competition was less likely to be expressed in the absence of eye contact, agreements were of higher quality in this condition. Nevertheless, future studies would merit from a closer examination of emotions as these play a pivotal role in negotiations (Sinaceur & Tiedens, 2006; Van Kleef, De Dreu, & Manstead, 2004).

Our work has also implications for practice. The finding that different individuals ascribe different meaning to different forms of communication, suggests that it is important to consider how one's counterpart interprets the presence (or absence) of a specific communication form. For example, if the goal is to create maximum value for both sides, one should try to negotiate in the other party's preferred communication environment (e.g. in the presence or absence of visual contact or instigate an email discussion if the counterpart is uncomfortable speaking English as to provide them extra information-processing time) because this may increase the likelihood that the other party will share information more freely. An additional effect might be that one's counterpart will be more likely to appreciate—and reciprocate—the favor. However, when one is focused on persuading others or claiming value in a short-term, competitive negotiation, a communication form that gives an advantage over the other might be preferable.

Insights from cross cultural psychology and communication research helped us to clarify the impact of visual contact on negotiations by showing that it is not necessarily visual contact that affects negotiators' outcomes but rather the meaning they ascribe to its presence (or absence) and whether or not these meanings are shared. Because direct communication via the face is essential to develop a shared understanding for two females, they would rather have visual contact than not, and if they have it, they would rather have eye contact than not. And because communication via the face increases discomfort among two males, they would rather not have visual contact, and if they do, they would rather not have eye contact.

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## Endnotes

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<sup>i</sup> Search terms included a combination of the words negotiation, communication, media, eye contact, visual contact, negotiation, and nonverbal communication.

<sup>ii</sup> We also tested whether the predicted interaction between eye contact and sex composition on agreement quality was mediated by the level of shared understanding reported by negotiators. To test this, we dummy coded a contrast (2 2 -1 -1 -1 -1) predicting that agreement quality and shared understanding were higher in the female eye contact condition and the male no eye contact condition (both conditions received a value of 1) and lower in the female no eye contact condition and male eye contact condition (both receiving a value of -1). We found evidence of mediation such that there was a direct effect from the predicted contrast on agreement quality ( $\beta = .21, p = .05$  and  $\beta = .30, p < .001$  for the uncorrected and corrected measure respectively) and the shared understanding measure ( $\beta = .27, p = .01$ ).

However, when both contrast and shared understanding were entered as predictors of negotiation outcomes, the effect of the first became weaker ( $\beta = .11, p = .27$  and  $.22, p = .03$  for the uncorrected and corrected measure respectively), and that of the process measure became stronger or remained the same ( $\beta = .34, p = .002$  and  $\beta = .29, p = .01$ ). Evidence of mediation was stronger for the uncorrected measure ( $R^2 = .15, Z_{Sobel} = 2.05, p = .04$ ) than for the corrected measure ( $R^2 = .17, Z_{Sobel} = 1.68, p = .09$ ). These analyses show that one reason for why sex differences and eye contact interact to impact agreement quality is because they affect negotiators' understandings of each other.

<sup>iii</sup> References marked with an asterisk are included in the meta-analysis.

Figure 1.

*The impact of visual contact and sex on agreement quality in Study 1*

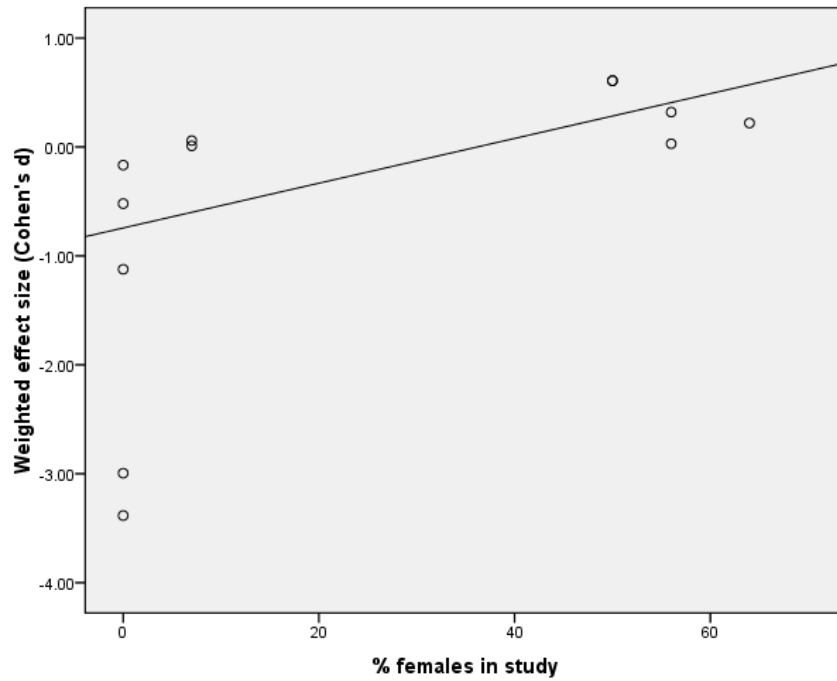


Figure 2a.

*Experimental set-up for eye contact condition*

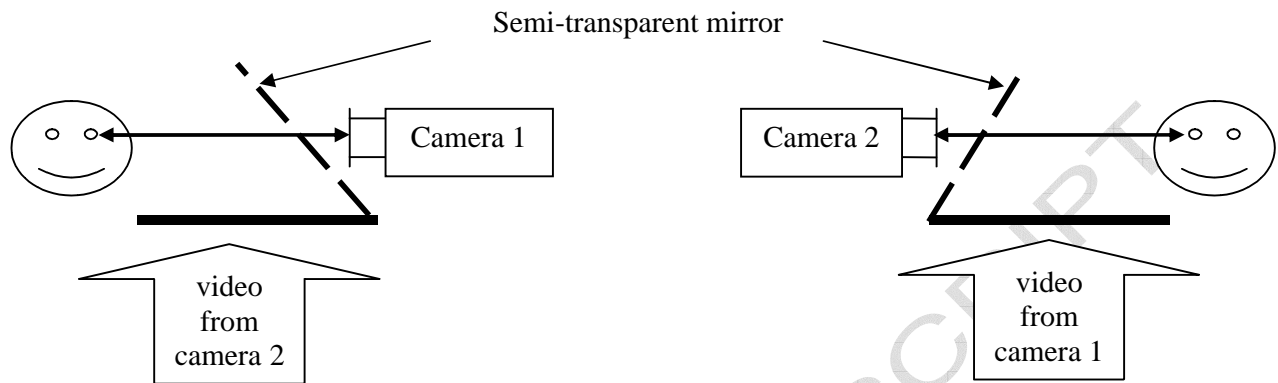


Figure 2b.

*Example of the co-authors in the eye contact condition*

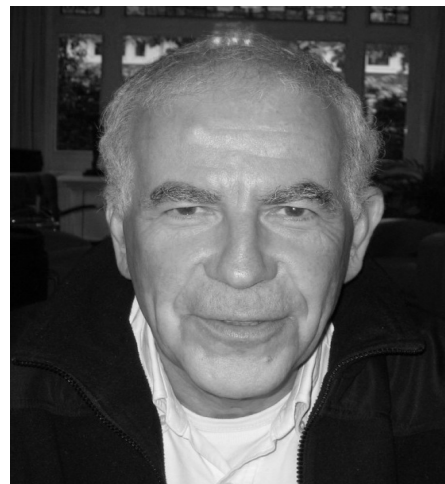


Figure 3a.

*Experimental manipulation of no eye contact condition*

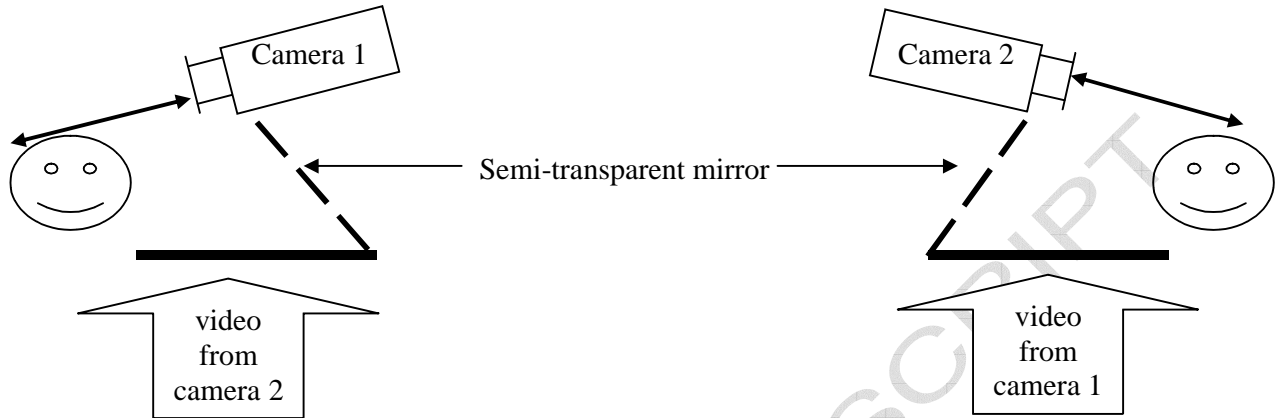


Figure 3b.

*Example of the co-authors in the no eye contact condition*



Table 1.

*Study characteristics and effect sizes in Study 1*

		Effect size $d_w$	N dyads	% females	Comparison	PNI
Carnevale & Isen	1986	-3.38	20	0	ftf-audio	0
Carnevale et al	1981	-.52	66	0	ftf-audio	0
Fry	1985	-.17	36	0	ftf-audio	0
King & Glidewell	1980	-3.00	12	0	ftf-audio	0
Lewis & Fry	1977	-1.12	23	0	ftf-audio	0
McGinn & Keros	2002	.22	30	64	ftf-audio	0
Purdy et al	2000	.03	42	56	ftf-audio	1
Purdy et al	2000	.32	37	56	video-audio	1
Short	1974	.06	32	7	ftf-audio	1
Short	1974	.01	32	7	video-audio	1
Turnbull et al	1976	.61	44	50	ftf-audio	1
Turnbull et al	1976	.61	44	50	video-audio	1

*Note.* Effect sizes are positive when dyads communicating in the absence of visual contact attained more integrative outcomes than dyads that did not communicate as such.  $d_w$  = mean weighted effect size. PNI = Partial non-independence, 1 = effect size calculations associated to this article included the same control group, 0 = effect size calculations were based on a unique control group.

Table 2.

*Means and standard deviations at dyad level in Study 2*

	Eye Contact			No Eye Contact		
	Females (N=16)	Males (N=14)	Mix (N=15)	Females (N=15)	Males (N=15)	Mix (N=15)
Shared understanding	5.25a (.95)	4.64b (.52)	4.73b (.85)	4.82 (.85)	5.18a (.47)	4.95 (.63)
Quality of agreement (uncorrected)	425.63 (96.33)	382.38 (147.82)	351.33b (172.66)	372.67 (133.90)	453.17a (98.65)	418.50 (141.60)
Quality of agreement (corrected)	470.31a (45.84)	414.88b (78.21)	433.00b (39.13)	431.00b (35.06)	474.67a (62.63)	471.33a (35.22)

*Note.* Means in a row with different subscripts differ at  $p < 0.05$ .

Standard deviations between parentheses