Feeling understood via Face-to-Face and Computer Mediated Communication

Research into the influence of communicating in person or via WhatsApp, and the moderating role of attachment style on (mis)understanding.

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Abstract

It has been suggested that people feel more understood when they communicate in person compared to when they communicate via computer mediated communication (CMC). This thesis links communication methods to achieved (mis)understanding and attachment style. Prior research has shown that anxious and avoidant attached individuals prefer to communicate via CMC, therefore it is believed that attachment styles have an influence on the level of understanding that individuals achieve. The object of this thesis was to investigate differences in level of (mis)understanding romantic couples achieve via CMC and face-to-face (FtF) communication, and the moderating role of attachment style. In this study, fourty-eight individuals (24 couples) engaged in problem-solving discussions in both CMC and FtF conditions. After each discussion, participants answered questions to measure their level of (mis)understanding. Contrary to our expectations, results showed no effect of communication method on level of (mis)understanding. Suggesting that couples achieve the same level of (mis)understanding via CMC and FtF communication. Additionally, it was proposed that avoidant and anxious attached individuals would achieve a higher level of understanding and have fewer misunderstandings when communicating via CMC compared to FtF, and that anxious attached individuals would feel more understood via CMC than avoidant attached individuals. The results did not support these hypotheses. However, we found that participants who reported a higher score on the anxious attachment style scale, reported lower levels of understanding. Explanations and recommendations for future research are mentioned in the discussion.

Keywords: Felt Understanding, Misunderstanding, CMC, FtF, Attachment Style, Romantic Relationships

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Introduction

A central aspect of close relationships is understanding (Reis, Clark, & Holmes, 2004). Partners of romantic couples want to be understood by the other through effective communication. When individuals feel understood by their partner, it provides them with a sense that they are socially connected to this person and not alone. Feeling understood by others is also associated with physical well-being and higher life satisfaction (Lun, Kesebir, & Oishi, 2008). On the other hand, feeling misunderstood can makes us feel isolated and socially rejected (Lun, et al., 2008). Effective communication is one of the most important predictors for a successful relationship (Anderson & Emmers-Sommer, 2006; Meeks, Hendrick, & Hendrick, 1998). Therefore, efforts to understand each other and to avoid misunderstandings in interactions, are common goals within romantic relationships.

In contemporary society, romantic couples can use several communication methods to interact with each other (e.g. computer mediated and face-to-face). While traditionally, interactions occurred predominantly offline (i.e. communicating face-to-face), these interactions have shifted online with the use of computer mediated devices. In recent years, the ability to communicate via computer mediated devices, has shifted the pardigm for how young people communicate and connect with one another (Nitzburg & Farber, 2013). These days, texting has become a mainstream method of communication (Luo, 2014). Communicating online allows individuals to continuously interact with their partner, friends, and family at any time and any occasion. For the scope of the present paper, Computer Mediated Communication (CMC) comprises the use of texting, instant messaging, email, social media, and chat (Edwards, Bybee, Frost, Harvey, & Navarro, 2017).

Previous research that compared the level of understanding achieved in CMC versus Face-to-Face (FtF) communication showed contradicting results (Perry & Werner-Wilson, 2011; Perry, 2010). In the present study, a comparison is made of the level of understanding accomplished through FtF versus CMC communication in romantic relationships, which contributes to bring more clarity to these contradicting results.

However, whether we feel understood or misunderstood may not be the same for everyone and can be affected by other factors. For example, the attachment style of a person might have an influence on the level of understanding and the preference of different communication methods (Perry & Werner-Wilson, 2011). Many attachments theorists propose that individuals differ in their capacity to maintain close emotional relationships (Hazan & Shaver, 1987; Bartholomew & Horowitz, 1991). The existing body of research on attachment style and communication has predominantly focused on the frequency with which individuals use different communication methods. For instance, we can assume that avoidant and anxious individuals rely more on texting, since this form of communication is perceived as less intimate (Wardecker, Chopik, Boyer, & Edelstein, 2016; Luo, 2014). In addition, anxious individuals who constantly wish to be in contact with their partner have the possibility to achieve this via texting (Luo, 2014). However, to our knowledge no earlier research has investigated whether these individual differences in attachment style have an effect on feeling understood, when comparing the level of understanding romantic couples achieve in CMC and FtF communication. Therefore, the second aim of this study is to fill this gap in the literature and explore if attachment style has an influence on level of understanding achieved via CMC and FtF communication in romantic relationships. The findings of this study are important to achieve a better understanding of attachment style in combination with felt understanding within romantic relationships. Therefore, the main research questions of this thesis are: *To what extend do romantic couples feel understood using CMC and FtF for problem-solving discussions? And to what extent does attachment style moderate the relationship between the communication method and level of understanding?*

The first part of the literature review of this thesis addresses the concepts of understanding and misunderstanding within communication. Next, differences between CMC and FtF communication are described. The last part specifies attachment styles and how this may influence the level of understanding people achieve via CMC and FtF communication.

Literature Review

Understanding and Misunderstanding

People have the urge to be understood by their communication partner. In the present thesis, feeling understood is defined as the believe that one is known and appreciated by the other (Reis, Lemay, & Finkenauer, 2017). The relationship individuals have with their romantic partner is probably the closest and most intimate relationship someone has in his or her adult life. Feeling understood by a romantic partner is considered to be more important than felt understanding from others (Kansky, 2018). Besides this understanding from others, the feeling that a romantic partner understands, and is understood by one's partner seems to be even more important to relationship well-being than the actual knowledge someone has about their partner (Pollmann & Finkenauer, 2009).

The impact of feeling understood by their romantic partner can be beneficial for an individual's well-being (Reis et al., 2017; Reis et al., 2004), resulting in perceiving greater emotional support, and intimacy (Gordon & Chen, 2016). Lun et al. (2008) conducted a self-reported diary study with 128 participants, to investigate if people would feel happier and healthier when they feel more understood. Over two weeks, participants reported their daily physical symptoms, daily life satisfaction, and their daily experience of felt understanding and misunderstanding. Their findings have shown that on days when people felt more understood by their interaction partners, they had fewer physical symptoms and higher life satisfaction (Lun et al., 2008). However, the study did not find a relation between misunderstandings and physical symptoms.

The feeling of being understood by an interaction partner can be associated with perspective taking. During an interaction, people can try to imagine what the feelings of their interaction partner are or try to imagine what their own feelings would be if they were in the same situation (Batson, Early, & Salvarani, 1997), in order to give their interaction partner the feeling that he or she is understood. Research have shown positive outcomes when people are able to overcome their own egocentric perspective, and try to perceive a situation from their interaction partner's point of view. For instance, the study by Park and Raile (2010) focusing on perspective taking among coworkers of a Korean business,

found that individuals report higher communication satisfaction when they have the feeling that their coworker takes their perspective and understands them. Another positive outcome is relationship quality, the results of the study by Schröder-Abé and Schütz (2011) highlighted the importance of perspective-taking between husbands and wives, by demonstrating that a common understanding of each other improved the relationship quality. In conclusion, when people are able to take the perspective of their communication partner, they show that they are able to better understand their communication partner.

Although the present thesis will predominantly focus on the level of understanding people achieve via different communication methods, misunderstandings are important to address as well. When we put our thoughts and ideas into messages, there is a possibility to be misunderstood by others. Misunderstandings refers to a situation in which at least one speaker recognizes that the communication partners (i.e. source and receiver) hold different meanings for a message (Edwards et al., 2017). Edwards et al. (2017) conducted a study with 98 participants, examining how these participants interpreted a recent misunderstanding they personally had either via CMC or FtF. Their study found that misunderstandings in FtF situations are perceived as more seriously than those in CMC situations. Furthermore, misunderstandings can lead to less relationship satisfaction (Murray, Holmes, Bellavia, Griffinn, & Dolderma, 2002), and when they occur in FtF situations they even seem to have a greater potential to damage a (romantic) relationship (Edwards et al., 2017). Furthermore, the feeling of being misunderstood may also be related to stress. Having a disagreement is a source for a stressful experience (Aloia & Solomon, 2015). Another study found that having an interpersonal conflict, which also includes having a disagreement, was associated with feelings of stress (Ilies, Johnson, Judge, & Keeney, 2011). Based on these consequences and perceived seriousness of misunderstandings in FtF, it seems to be important to make an effort to clearly convey the intended tone of voice of a message when we are communicating in order to avoid misunderstandings.

In conclusion, the previous discussed research about understanding and misunderstanding showed that these two concepts differ from each other. Furthermore, felt understanding and felt misunderstanding have several different effects. For instance, when people feel more understood they tend to have fewer

physical symptoms (Lun et al., 2008), and it improved their relationship quality (Schröder-Abé & Schütz, 2011). However, when people feel misunderstood they seem to be less satisfied with their relationship (Murray et al., 2002), and it can lead to feelings of stress (Aloia & Solomon, 2015).

Face-to-face vs. Computer Mediated Communication

CMC is becoming increasingly common, with smartphone and internet usage growing worldwide (Poushter, 2016). For people who have busy lives and who are living apart from their friends and family, communicating via CMC is a convenient solution (Baym, Zhang, & Lin, 2004). According to previous research, CMC and FtF communication are similar on different outcomes. Mallen, Day, and Green (2003), found that participants in the FtF and online chat condition reported the same depth of processing after participants had to recall facts about the conversation they had two weeks earlier. In addition, Derks, Fischer, and Bos (2008) stated that emotions in CMC are expressed to the same extent as in FtF communication. Furthermore, Perry and Werner-Wilson (2011) conducted an experiment with 47 romantic couples that engaged in problem-solving discussion both communicating via CMC and FtF. Their results showed that couples experience corresponding levels of understanding for problem-solving discussions via CMC and FtF communication. The results of these studies indicated that CMC and FtF communication are equivalent on different outcomes. For instance, people seem to be able to express emotions via CMC and FtF to the same degree, and romantic couples report the same level of understanding after they tried to solve a discussion via both communication methods.

However, a few scholars provided evidence that there are differences between CMC and FtF communication, for instance, in the perceived intimacy between CMC and FtF. Perceptions of intimacy are an important factor for achieving understanding within relationships (Reis et al., 2004). Wardecker et al. (2016) conducted a study with 328 participants who were in romantic relationships, they were asked how intimate they considered four communication methods: FtF, phone calls, text messaging, and email. The results indicated that individuals consider FtF interactions as the most intimate, followed by phone conversations, text messages, and email messages. Jiang, Bazarova, and Hancock (2011) conducted an

experiment whit 79 participants who were randomly assigned to have an interaction via CMC or FtF with a stranger. Their results showed that people disclose more intimate information about their self in CMC compared to FtF communication, which produce greater intimacy. Furthermore, the findings by Jiang et al. (2011) are in line with the study by Valkenburg and Peter (2009), who conducted a survey with 812 adolescents to investigate the effects of CMC (e.g. instant messaging) on the quality of friendship relations. They found that instant messaging has a positive effect on friendships quality, due to fact that adolescents have the tendency to disclose intimate information about their selves online (Valkenburg & Peter, 2009). This indicates contradicting results, even though people consider FtF as the most intimate communication method, they will not share more intimate information about themselves via FtF. Therefore, it is interesting that people share more intimate information about themselves via CMC, which has positive effects on the quality of friendships. Based on the previous discussed studies, we cannot conclude that a higher level of understanding is achieved in CMC or FtF communication, since both communication methods are related to perceptions of intimacy. However, the present thesis focuses on partners of romantic couples, and based on the results by Wardecker et al. (2016) we can assume that partners of romantic relationships experience more intimacy in FtF interactions, which is an important factor to felt understanding.

Next to intimacy, CMC and FtF seem to differ in the communication of emotions. Contrary to the finding by Derks et al. (2008) that the communication of emotions is similar in CMC and FtF conversations, Owens, Neale, and Sutton (2000) reported that email is lower in richness, because fewer cues are available compared to FtF communication. FtF communication consists of verbal and nonverbal cues, and is therefore considered as the richest medium of communication (Trevino, Daft, & Lengel, 1990). In addition, in her theoretical paper, Byron (2008) stated that feedback given by the communication partner is delayed in CMC conversations. This affects how a message is interpreted. More specifically, Byron and Baldridge (2007) stated that receivers tend to wrongly interpreted messages send via email as more negative as intended by the sender of the message. A more recent study by Kafetsios, Chatzakou, Tsigilis, and Vakali (2018) that examined how 163 participants experience emotions in CMC

and FtF interactions, concluded that people experience emotions less positively via CMC. Furthermore, their results showed that people experience FtF interactions as more positive than CMC interactions.

Another important factor on which CMC and FtF differ are nonverbal cues. CMC prevents the exchange of nonverbal cues, and due to the lack of nonverbal cues it is seen as a more impersonal medium (Tidwell & Walther, 2002). These cues are transferred to each other in FtF communication via two aspects, namely: the physical environment, and the nonverbal behavior of persons (e.g. body language, facial expressions, and eye contact) (Dubrovsky, Kiesler, Sethna, 1991). Social media these days, provide users with the opportunity to send videos and photos, and not only text-based communication. Due to affordances such as the visibility of nonverbal cues in videos (Clark-Gordon, Bowman, Watts, Banks, & Knight, 2018), some social media channels are probably richer in nonverbal cues than others. This can affect the way people interpret messages via social media. Kelly et al. (2012) who conducted six focus groups with college students to investigate factors that are associated with choice of communication channel, found that due to the lack of nonverbal cues, texting has a greater potential for miscommunication. This result was also found in the study by Kelly and Miller-Ott (2018), that suggested that miscommunications are likely to occur in texted communication due to the lack of nonverbal and context cues. Furthermore, the results by Kelly et al. (2012) showed that people report texting as inappropriate for important or serious topics, since texting provides them with less cues and requires more typing.

There are a limited number of studies that conducted an experiment to compare interactions in CMC and FtF conditions. Therefore, the present study extends the current literature with an experiment. When comparing CMC to FtF communication, previous research indicates that misunderstanding could occur in both communication methods. The absence of nonverbal cues in CMC may result in achieving a lower levels of understanding of perhaps even misunderstanding between communicative partners. It is hypothesized that due to the lack of nonverbal cues and the delayed feedback in CMC communication, people achieve a higher level of understanding in FtF communication. The following hypotheses was developed:

H1: Partners of a romantic couple achieve a higher level of understanding and have fewer misunderstandings when communicating FtF than CMC.

Attachment Style

Originally, attachment theory was conceptualized to describe the emotional bond between infants and their caregivers and the anxiety that occurred when they were separated from their caregivers (Bowlby, 1969). Although people develop attachment styles early in life, Hazan and Shaver (1987) noted similarities between this first bond with caregivers and relationships with romantic partners later in life. Furthermore, these experiences with caregivers during early childhood, form individuals their perceptions and expectations in relationships (Roberts & David, 2016).

Attachment styles are related to both how people view themselves and how they view others (Van Buren & Cooley, 2002). Ainsworth and Bell (1970) were one of the first who identified three types of attachment styles: avoidant, anxiety and secure. The avoidance dimension captures avoidance of intimacy and emotional expression (Luo, 2014), whereas the anxiety dimension is related to the degree whether they will be accepted in relationships and captures fear of abandonment, and insufficient love in romantic relationships (Morey, Gentzler, Creasy, Oberhauser, & Westerman, 2013; Luo 2014; Wardecker et al., 2016). Individuals who report low levels of both avoidance and anxiety dimensions, are considered as secure. Secure individuals have positive views of themselves and others, are self-confident and are comfortable with intimacy (Bartholomew, 1990). Attachment style researchers these days still distinguish along these three dimensions: avoidant, anxiety, and secure (Luo, 2014; Oshri, Sutton, Clay-Warner, & Miller, 2015). Therefore, in the present study, a distinction in attachment style is made into three dimensions: avoidant, anxiety, and secure.

Attachment styles have an influence on the preferred choice of a communication channel, and may have an influence on the level of understanding achieved via different communication methods. Morey et al. (2013) administered a survey with two cohorts among 280 students to investigate how attachment style was related to communication technology use within romantic relationships. They found

that the use of electronic communication by partners in romantic relationships depends on their attachment style. Luo (2014) found that both avoidant and anxious individuals prefer to use less intimate communication channels, namely texting. Avoidant individuals use texting to maintain their close relationships, while anxious individuals, who have the urge to have their partner close by, use it to be in contact with their partner when he or she is gone (Luo, 2014). Securely attached individuals have been found to use CMC as a tool to augment existing relationships in the offline world (Oldmeadow, Quinn, & Kowert, 2013). As previously discussed, avoidant individuals are less likely to communicate FtF as it is generally perceived as more intimate and straightforward. In addition, a study by Wardecker et al. (2016) who investigated the preferred methods of communication with romantic partners using an attachment theory framework, showed that avoidant individuals were less likely to make phone calls or send text messages when communicating with romantic partners. This is in line with the study by Morey et al. (2013) that found that avoidant individuals prefer to communicate more often via email, while they communicate less via phone or text messaging. In addition, this is in line with the characteristic of the avoidant attachment style to avoid intimacy. According to the study by Wardecker et al. (2016) anxious participants preferred email and text messaging when communicating with their partner. Other research has shown that the anxiety dimension of attachment style was unrelated to communication channel preference (Morey et al., 2013). This finding partly contradicts the findings of Luo (2014), who found that anxious individuals prefer to communicate via texting, and the study by Wardecker et al. (2016) that indicates a communication preference for email and text messaging. In sum, avoidant and anxious individuals are more likely to communicate via CMC. However, previous literature about communication channel preferences for avoidant and anxious individuals have shown different results for anxious individuals.

It remains unknown if attachment style has an influence on the perceived level of understanding via CMC and FtF communication. The present thesis extends the literature, by investigating the previous discussed contradicting results. Furthermore, the present thesis investigates if channel preferences are translated in feeling more understood via CMC, and which medium works best for avoidant and anxious

attached individuals. Due to the lack of studies that links attachment style to the level of understanding, the researcher could only hypothesize the expected effects on level of understanding for anxious and avoidant individuals based on the communication preferences found in previous research. Currently, no experiments have been conducted on this topic. It is hypothesized that since avoidant and anxious attached individuals prefer to communicate via CMC, they would report higher levels of understanding when they communicate via CMC compared to FtF. Furthermore, research has indicated that anxious individuals prefer to communicate via texting, therefore it was expected that anxious individuals would achieve a higher level of understanding when communicating via texting than avoidant partners. The following hypotheses are developed:

H2: Avoidant and anxious partners of a romantic couple achieve a higher level of understanding and have fewer misunderstandings when communicating CMC than when communicating FtF.

H3: Anxious partners of a romantic relationship achieve a higher level of understanding when communicating via CMC (i.e. texting) than avoidant partners.

Method

To what extend do romantic couples feel understood via different communication methods, and can we identify differences in types of attachment style (avoidant, anxious, and secure)? To investigate these questions, an experimental study approach was employed, using a within-subjects design for the variable level of understanding. In this study, the role of attachment style, and communication method were investigated on the level of understanding. Felt understanding is the dependent variable, and communication method (i.e. communicating via CMC vs. communicating via FtF) is the independent variable. The expected moderator variable is attachment style.

Participants

Participants were recruited using the snowball sampling technique, using the researchers' own network to approach romantic couples, and the network of participants. Criteria to be included were being

over the age of eighteen, and having some familiarity with communicating via CMC (e.g. WhatsApp). The aim for this study was to gather 30 romantic couples, however, due to cancellations the researcher managed to gather 24 romantic couples (23 different-sex couples, and 1 same-sex couple). A total of 48 Dutch participants participated in this experiment with a mean age of 26.79 years (*SD* = 7.32), of whom 52.1% was female. The 24 romantic couples discussed one problem face-to-face, and one problem via WhatsApp.

Design and procedure

In order to answer the research question and investigate the hypotheses, three surveys were designed using Qualtrics. After welcoming participants and asking for informed consent, they were briefly introduced to the topic and asked to write down at least two topics for discussion. Participants were asked to separately indicate topics for discussion on which they occasionally disagreed with their partner. While the researcher considered the topics indicated by the participants and selected two topics for each couple to discuss, each participant completed the first survey measuring their attachment style. After completing this first survey, participants were instructed to have a problem-solving discussion on the topic they had indicated earlier. The couples did not have any time limit for their discussions. According to a study by Venter (2017) a difference between FtF communication and CMC is the lack of physical presence, facial expressions and eye contact. Therefore, couples sat in the same room when discussing in the FtF condition, for the CMC condition, couples were separated into different rooms. During both discussions, the researcher was separated by room from both partners. The order of the conditions was switched after five couples. After the first discussion, participants filled out the second survey measuring their achieved level of understanding. This procedure repeated itself after the second discussion. Participants filled out the third survey after the second discussion. This third survey contained the same questions as the second survey, however, participants were also thanked for their participation and debriefed about the aim of the study. All the discussions took place at the participants' homes.

Materials

All participants filled out three surveys in total. The first survey started with two demographic question about participants their age and gender. Thereafter, they were asked to fill in a code containing their anniversary date, one letter for the first letter of the younger partner's mother's first name, and one for the older partner's mother's first name (e.g. 0106JE). This code was used to be able to identify couples in the dataset. In the last section of this survey, participants were asked to answer questions defining their attachment style.

Attachment style. Attachment style was measured using 17 items derived from research by Simpson, Rholes, and Phillips (1996). Eight of these questions measured the avoidant attachment style (α = .59) (e.g. "I'm not very comfortable having to depend on other people"). Nine items measured the anxious attachment style (α = .71) (e.g. "'I often worry that my partner(s) don't really love me"). Response categories ranged from (1) *strongly disagree* to (7) *strongly agree*. A full list of items can be found in Appendix A.

The second and third survey contained measures regarding the level of (mis)understanding participants achieved in both conditions. All participants completed these surveys after the discussions in both the CMC and FtF conditions. In the first section of these surveys, participants had to fill in the communication method, the initial code they had to create for the first survey, their date of birth, and the topic of discussion. Thereafter, the survey consisted of four questions about the importance of the topic (see Appendix B), followed by four questions regarding the level of understanding and one question measuring their level of misunderstanding. The surveys included three questions about negative emotions (see Appendix C) and two questions about stress (see Appendix D) that were measured for another research project.

Level of understanding. To measure the level of understanding participants achieved in both communication conditions, participants were asked to answer four questions. One item was adapted from the study by Lun and Oishi (2008) (e.g. "During the discussion with my partner I feeled understood"). Response categories ranged from (1) *strongly disagree* to (5) *strongly agree.* The list of items can be

found in Appendix E. The reliability of the measure "level of understanding" in the first measurement (Cronbach's α = .85) and second measurement (Cronbach's α = .88) was good.

Level of misunderstanding. The level of misunderstanding was measured with one questions, on a scale from 1 (*strongly disagree)* to 5 (*strongly agree*). The question was adapted from Lun and Oishi (2008) (e.g. "During the discussion with my partner I feeled misunderstood"). The question can be found in Appendix F.

The third survey also contained a debriefing about the aim of the study, and participants were informed about the possibility to receive the results of the study if they were interested. If they were interested, they could provide their email address on a separate sheet given by the researcher.

Results

In this study, differences in the level of understanding achieved via CMC and FtF communication were investigated. Specifically, romantic couples rated their level of understanding after a discussion via WhatsApp, and another time after they discussed FtF. In this section, the hypotheses were tested.

The main variables were checked to see whether these variables were normally distributed. The "level of understanding" and the "level of misunderstanding" were both normally distributed in the CMC condition. However, in the FtF condition the data slightly deviated from a normal distribution for the "level of understanding" ($z_{skewness}$ = -2.20, $z_{kurtosis}$ = 2.15, $D(48)$ = .124, p = .063) and the "level of misunderstanding" ($z_{skewness}$ = 3.04, $D(48)$ = .315, p = <.001) measures. Since there was skewness in both dependent variables, the outcomes of the repeated measures ANOVA may not be completely reliable and the results need to be interpreted with caution. The descriptive statistics and correlations regarding the dependent variables and moderation variables are listed in Table 1. As can be seen, there was a significant correlation between the level of understanding and level of misunderstanding in the CMC condition ($r(48)$ = -.49, p <.001), and in the FtF condition ($r(48)$ = -.41, p <.001). This suggest that the scales for level of understanding and level of misunderstanding are not two ends of the same scale, then they should have

correlated higher. Even though the data from partners of a romantic couple cannot be seen as independent, the researcher decided to still perform a repeated measures ANOVA because a mixed model is included in the curriculum of this master.

Table 1. Means, Standard Deviation, and Correlations of the level of (mis)understanding per condition and attachment style.

	M (SD)	1	2	3	4	5	6
1. Level of understanding CMC	3.57 (0.82)						
2. Level of understanding FtF	3.76 (0.64)	.**333***					
3. Level of misunderstanding CMC	2.29 (1.11)	**-.493****	-.170				
4. Level of misunderstanding FtF	1.92 (0.85)	-.091	**-.414****	.117			
5. Avoidant attachment style	3.63 (0.73)	-.151	-.135	.034	.102		
6. Anxious attachment style	2.81 (0.81)	**-.384****	**-.406****	.250	.127	.367	

Note. $*p < .05$, $**p < .01$.

To address the first hypothesis, a repeated measures ANOVA was conducted, with communication method (CMC or FtF) as within-subject factor, and the perceived level of (mis)understanding as dependent variable(s). Initially, time to complete the discussion and importance of the discussed topic were taken into account as control variables. However, since these two variables are time-varying covariates, another statistical test was advised with which the researcher was not familiar with. Therefore, it was decided to still perform the repeated measures ANOVA, and exclude the control variables.

The first hypothesis was not supported, as the ANOVA did not show a significant effect of communication method on perceived level of understanding, $F(1, 47) = 2.43$, $p = .126$, $\eta^2 = .05$, nor on misunderstanding $F(1, 47) = 3.91$, $p = .054$, $\eta^2 = .08$. There is a small difference in the mean scores of the level of (mis)understanding. However, discussing via FtF ($M = 3.76$, $SD = 0.64$) do not lead to a

significantly higher level of understanding, than discussing via CMC (*M* = 3.57, *SD* = 0.82*)*. In addition, discussing via FtF (*M* = 1.91, *SD* = 0.84*)* do not lead to significantly fewer misunderstandings, than discussing via CMC (*M* = 2.29, *SD* = 1.11*)*.

To test the second and third hypotheses, two moderation analyses using PROCESS were conducted, with medium as independent variable, level of (mis)understanding as dependent variable, and attachment style as moderator. Time to complete the discussion and importance of the discussed topic were taken into account as control variables. Only the results of the first measurement were used for these analyzes, since the researcher was not able to add a within factor in PROCESS. The results of the second measurement can be found in Appendix G. The following hypotheses were tested:

- Avoidant and anxious partners of a romantic couple achieve a higher level of understanding and have fewer misunderstandings when communicating CMC than when communicating FtF.
- Anxious partners of a romantic relationship achieve a higher level of understanding when communicating via CMC (i.e. texting) than avoidant partners.

To test if avoidant attachment style moderates the level of understanding via FtF or CMC, a regression analysis was performed. For this regression analysis, the avoidant attachment style is considered as a moderator. The overall model was not significant, $R^2 = .19$, $F(5, 41) = 1.98$, $p = .102$. The outcome of the regression model is presented in Table 2. Importantly, there was no interaction effect between medium and avoidant attachment style.

Table 2. Linear model of predictors of dyadic adjustment (understanding)

	B	[95% CI]	SE	*t*	*p*
Constant	4.08	[3.19, 4.97]	0.44	9.27	<.001
Medium	-0.10	[-0.68, 0.48]	0.29	-0.34	.732
Avoidant Attachment Style	-0.01	[-0.32, 0.30]	0.16	-0.94	.942

Medium x avoidant attachment style	-0.43	[-1.09, 0.23]	0.33	-1.31	.197
Topic importance	-0.03	[-0.34, 0.28]	0.15	-0.21	.835
Time	-0.07	[-0.15, 0.01]	0.04	-1.77	.085

To test if avoidant attachment style moderates the level of misunderstanding via FtF or CMC, a regression analysis was performed. For this regression analysis, the avoidant attachment style is considered as a moderator. The overall model was not significant, $R^2 = .11$, $F(5, 41) = 0.97$, $p = .449$. The outcome of the regression model is presented in Table 3. Importantly, there was no interaction effect between medium and avoidant attachment style.

Table 3. Linear model of predictors of dyadic adjustment (misunderstanding)

	B	[95% CI]	SE	*t*	*p*
Constant	2.26	[0.88, 3,64]	0.68	3.32	.002
Medium	0.49	[-0.41, 1.39]	0.45	1.10	.276
Avoidant Attachment Style	0.18	[-0.31, 0.66]	0.24	0.73	.467
Medium x avoidant attachment style	0.07	[-0.95, 1.09]	0.51	0.13	.897
Topic importance	-0.10	[-0.58, 0.38]	0.24	-0.42	.679
Time	0.04	[-0.08, 0.16]	0.06	0.63	.531

For this regression analysis, the anxious attachment style is considered as a moderator. To check whether there is a relationship between the anxious attachment style and level of understanding, a Pearson correlation analysis was performed. There was a negative correlation between anxious attachment style and level of understanding after the first measurement ($r = -.464$, 95% BCa CI [-0.65, -0.25], $p = <.001$). The proportion of explained variance was 22 percent.

To test if the anxious attachment style moderates the level of understanding via FtF or CMC, a regression analysis was performed, with time to complete the discussion and topic importance as control variables. The overall model was significant, $R^2 = .30$, $F(5, 41) = 3.43$, $p = .011$. Anxious attachment

style had a main effect on the level of understanding. The outcome of the regression model is presented in Table 4. A higher score on the anxious attachment scale is related to a lower level of understanding. Importantly, there was no interaction effect between medium and anxious attachment style. Figure 1 also illustrates the effect of anxious attachment style on level of understanding. As can be seen from the figure, anxious attached partners of relationships report lower levels of understanding. The results did not show an interaction, therefore the second and third hypothesis were not supported.

Table 3. Linear model of predictors of dyadic adjustment (understanding)

	B	[95% CI]	SE	*t*	*p*
Constant	3.93	[3.03, 4.83]	0.45	8.83	<.001
Medium	-0.13	[-0.68, 0.41]	0.27	-0.49	.628
Anxious Attachment Style	-0.33	[-0.59, -0.07]	0.13	-2.59	.013
Medium x anxious attachment style	-0.29	[-0.81, 0.23]	0.25	-1.12	.269
Topic importance	-0.03	[-0.34, 0.28]	0.15	-0.19	.849
Time	-0.04	[-0.11, 0,04]	0.04	-0.99	.330

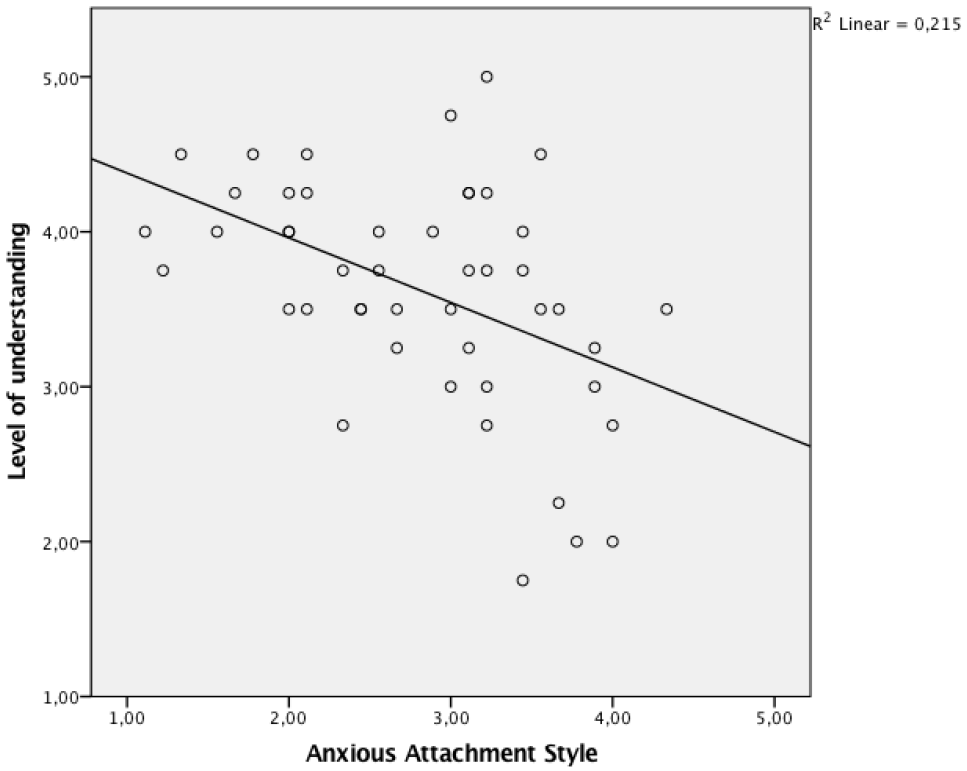

Figure 1. The scatter plot depicts the observed negative effect of anxious attachment style on the level of understanding.

To test if anxious attachment style moderates the level of misunderstanding via FtF or CMC, a regression analysis was performed. For this regression analysis, the anxious attachment style is considered as a moderator. The overall model was not significant, $R^2 = .10$, $F(5, 41) = 0.91$, $p = .487$. The outcome of the regression model is presented in Table 4. Importantly, there was no interaction effect between medium and anxious attachment style.

Table 4. Linear model of predictors of dyadic adjustment (misunderstanding)

	B	[95% CI]	SE	*t*	*p*
Constant	2.40	[0.91, 3.89]	0.74	3.24	.002
Medium	0.50	[-0.41, 1.40]	0.45	1.11	.273
Anxious Attachment Style	0.15	[-0.28, 0.58]	0.21	0.71	.484

Medium x anxious attachment style	-0.04	[-0.90, 0.83]	0.43	-0.08	.935
Topic importance	-0.12	[-0.63, 0.39]	0.25	-0.48	.634
Time	0.02	[-0.10, 0.15]	0.06	0.38	.703

In conclusion, romantic couples did not achieve a higher level of understanding or have fewer misunderstandings via FtF compared to CMC communication. However, anxious attachment style did have an effect on the achieved level of understanding.

Discussion

In an experimental study, I examined how using different communication methods -WhatsApp and FtF- influences the achieved level of understanding and misunderstanding between romantic partners, and the moderating role of attachment style. Although there are studies that compare the level of understanding romantic couples achieve via CMC and FtF, the current study is the first study that investigates if differences in attachment style influence whether people are better in communicating via CMC or FtF. It therefore aimed to specify which medium works best for whom.

It was hypothesized that people would report higher levels of understanding when they communicate via FtF compared to CMC. Contrary to this hypothesis and previous research demonstrating differences in felt understanding between CMC and FtF (Edwards et al., 2017; Kelly & Miller-Ott, 2018), this study did not find any differences. The present thesis found that communication method, whether a discussion took place FtF or via CMC (i.e. WhatsApp), did not have an effect on the achieved level of understanding, nor did it have an effect on level of misunderstanding. This result is in line with the results of the study by Perry and Werner-Wilson (2011) that found that romantic couples with a mean age of 27.78, achieve similar levels of understanding in both communication methods. However, the result of the present thesis may be caused by the recruitment method. The researcher used her own network to gather participants, and as a result younger people (M = 26.79) participated in the present study. Venter (2017) found that CMC users are mostly younger people. These individuals are more comfortable with using

digital interactive technologies for communication, since they have grown up with it and known it all their lives. Derks et al. (2008) stated that people who use CMC can effectively convey emotions in both CMC and FtF conversations. According to Venter (2017) younger and older generations differ in the way they communicate. The Baby Boomer generation, who were born between 1946 and 1964 (Venter, 2017), seem to have more difficulties with communicating through CMC, and use it mostly for short messages. A requirement to participate in this study was to have experience with communicating via WhatsApp on a daily basis. This led to an exclusion of older romantic couples, and to a mean age of 26.79 (N = 48) in the sample of the present study, indicating that all of the participants belong to a generation that has grown up with CMC. As previously mentioned, the result of the present study could be explained by the age of the participants in this study. The average age of participants from the present study is close to that of the sample Perry and Werner-Wilson (2011) used in their study. Furthermore, their study found the same result. More importantly, this finding implies that people can achieve the same level of understanding in CMC as in FtF communication, and indicates that people can communicate well via CMC.

The present study found that communication method did not have an influence on the level of misunderstanding. This indicates that people do not feel more misunderstood in CMC or FtF. Previous research has shown that when misunderstandings occur, they are perceived as more serious in FtF situations than in CMC situations (Edwards et al., 2017). In their study participants were asked to imagine a recent misunderstanding they personally had. However, people tend to remember conversation selectively (Hirst & Echterhoff, 2011), therefore the results of the study by Edwards et al. (2017) might be questionable. Perhaps participants rated misunderstandings as more serious in FtF settings, because people remember more about the situation in which the misunderstanding occurred. In the present study, romantic couples were instructed to discuss about a topic they disagreed on, and directly thereafter they filled out the survey measuring their level of misunderstanding. Therewith, potential influence of selective memories of the conversation were reduced. Previous research has also shown that people tend to have more misunderstandings via CMC due to the lack of nonverbal cues (Kelly et al., 2012; Kelly & Miller-Ott, 2018). The present study does not support those previous findings. A reason may be that

participants also included animated images (i.e. GIF) and emoticons in their messages. According to a study by Kannan and Shreya (2017) CMC conversations via WhatsApp are as rich as FtF conversations due to emoticons. People tend to evaluate emoticons by looking at both eye and mouth of emoticons to recognize facial emotions (Kannan & Shreya, 2017), which is similar as in FtF conversations. However, in the present study the WhatsApp conversations between romantic partners were not analyzed, and therefore it remain unknown whether participants used emoticons in their conversations.

To our knowledge this study was the first that investigated the moderating role of attachment style on the level of understanding achieved via CMC and FtF communication. It was expected that due to the preference for CMC communication (Luo, 2014; Wardecker et al., 2016), since CMC is perceived as less intimate, avoidant and anxious individuals would use CMC more frequently and this would lead to higher levels of understanding via CMC. However, even though avoidant and anxious individuals prefer to communicate via texting (Luo, 2014), the results of the present study found no support for this hypothesis. Suggesting that avoidant and anxious partners of romantic couples did not feel more understood when they communicate via CMC compared to when they have a conversation in person.

Next, it was hypothesized that anxious participants would feel more understood in the CMC condition than avoidant participants. As mentioned in the literature review, anxious individuals who have the urge to have their partner close by, use CMC to maintain contact with their partner when he or she is gone (Luo, 2014). Contrary to expectations, this study did not find any support for this hypothesis, and suggests that anxious individuals did not feel more understood when they communicate via texting (i.e. WhatsApp). However, during the experiments of the present study participants had their partner close by in the FtF condition, and in the CMC condition they were separated into different rooms. Even though, romantic couples were separated, anxious attached individuals could have had the feeling that the distance with their partner was relatively close. The fact that anxious attached people are not feeling more understood via CMC is interesting, considering that texting was found to be the most preferred communication method used by anxious individuals (Luo, 2014; Wardecker et al., 2016). The results of the present study provides a new insight on the effect of attachment style on felt understanding, and

shows that a preference for a communication method is not translated into a better outcome on felt understanding.

The current study showed that the anxiety attachment style dimension have an influence on level of understanding. This result indicates that individuals who are more anxiously attached feel less understood after the discussion with their partner than individuals who are more securely attached. This result may be explained by the fact that anxious attached individuals are associated with more negative behavior during conflicts (Simpson et al., 1996), and during the recovery of such a conflict (Taylor, 2014). In the present study, romantic couples had to try to resolve a disagreement. However, anxiety attachment style has been associated with higher levels of anger, which can lead to negative interaction patterns in a conflict (Harrington, 2006). Therefore, it could be argued that the result of the present study further supports the idea that those high in anxious attachment style, would behave in a more negative way, which is in line with the previous mentioned studies. In the present study, this negative behavior resulted in feeling less understood by their interaction partner during the discussion.

Strengths, Limitations, and Suggestions for Future Research

The findings of the present study contribute to the understanding of felt understanding and felt misunderstanding that romantic couples achieve via different communication methods. Furthermore, the moderating role of attachment style was investigated on the level of (mis)understanding achieved via different communication methods. The present study used an experimental design, which was relatively limited in the previous studies.

A limitation of this study is the relatively small sample size. It took a lot of time and effort to find romantic couples who were willing to participate in this experiment. It happened that romantic couples cancelled their participation, even when they had confirmed their participation and were scheduled. Therefore, it was not feasible to gather a sample size of 30 romantic couples. Eventually 24 couples participated in this study, which was sufficient for the data analysis.

This study showed that people achieve similar levels of (mis)understanding via CMC and FtF. This result is interesting, since existing research showed contradicting results. As explained in the discussion it is important to include different generations in future research when investigating the level of (mis)understanding achieved via CMC. It became evident that in previous studies mostly younger individuals participated. For instance, the mean age of the participants from the study by Kelly et al. (2012) was 18.80, and in the study by Mallen et al. (2003) the mean age was 19.98. Mallen et al. (2003) reported similar depth of processing in CMC and FtF conversation. However, according to Venter (2017), younger and older generations differ in the way they communicate via CMC. It may be that older people who have not grown up with CMC, feel less understood and have more misunderstandings than people who are more familiar with using CMC. Therefore, future research should include older participants in their sample to investigate if there are differences in felt (mis)understanding achieved via CMC and FtF between an older and younger generation.

Conclusion

This study looked into differences in the level of (mis)understanding romantic couples experience when discussing a problem via CMC and FtF and the moderating role of attachment style. The results of this study demonstrated that those higher in anxious attachment style were associated with lower levels of understanding. This finding can help couples better understand how attachment styles might affect felt understanding in discussions they have.

Another important result of this study showed that partners of romantic couples achieve similar levels of (mis)understanding when they try to solve a problem via CMC and FtF communication. This indicates that when romantic couples have a discussion, it does not matter in terms of felt (mis)understanding which communication method (i.e. CMC and FtF) they use. The results of the present study has given evidence that partners of romantic relationships can discuss their problems via CMC as effectively as FtF, achieving corresponding levels of understanding and misunderstanding. Digital

interactive technologies have changed the way how we interact and communicate with each other, but seems to be as effective as FtF communication.

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Appendices

Appendix A: Attachment AAQ

1. "I find it relatively easy to get close to others"
2. "I'm not very comfortable having to depend on other people"
3. "I'm comfortable having others depend on me"
4. "I rarely worry about being abandoned by others"
5. "I don't like people getting too close to me"
6. "I'm somewhat uncomfortable being too close to others"
7. "I find it difficult to trust others completely"
8. "I'm nervous whenever anyone gets too close to me"
9. "Others often want me to be more intimate than I feel comfortable being"
10. “Others often are reluctant to get as close as I would like"
11. "I often worry that my partner(s) don't really love me"
12. "I rarely worry about my partner(s) leaving me"
13. "I often want to merge completely with others, and this desire sometimes scares them away"
14. "I'm confident others would never hurt me by suddenly ending our relationship"
15. "I usually want more closeness and intimacy than others do"
16. "The thought of being left by others rarely enters my mind"
17. "I'm confident that my partner(s) love me just as much as I love them."

Appendix B: Topic importance

1. The topic that I have just discussed is important to me.
2. The topic that I have just discussed is a problem within my relationship.

Appendix C: Negative emotions

1. To what extent did you feel anger?
2. To what extent did you feel hostile towards your partner?
3. To what extent were you angry with your partner?

Appendix D: Stress

1. How stressful was the discussion that you just had?
2. To what extent are you upset about the discussion?

Appendix E: Level of understanding scale (Lun & Oishi, 2008)

4. During the discussion with my partner I felt understood.
5. To what extent did you feel confirmed?
6. To what extent did you feel that your partner cared about you?
7. To what extent did you feel appreciated?

Appendix F: Level of misunderstanding question (Lun & Oishi, 2008)

8. During the discussion with my partner I felt misunderstood.

Appendix G: Results PROCESS regression second measurement

To test if avoidant attachment style moderates the level of understanding via FtF or CMC, a regression analysis was performed with the scores from the second measurement. For this regression analysis, the avoidant attachment style is considered as a moderator. The overall model was not significant, $R^2 = .06$, $F(5, 41) = 0.57$, $p = .723$. The outcome of the regression model is presented in Table 5. Importantly, there was no interaction effect between medium and avoidant attachment style.

Table 5. Linear model of predictors of dyadic adjustment (understanding)

	B	[95% CI]	SE	*t*	*p*
Constant	3.89	[3.02, 4.75]	0.43	9.07	<.001
Medium	0.06	[-0.41, 0.54]	0.24	0.26	.798
Avoidant Attachment Style	-0.23	[-0.59, 0.13]	0.18	-1.27	.210
Medium x avoidant attachment style	0.07	[-0.69, 0.83]	0.37	0.18	.857
Topic importance	-0.01	[-0.31, 0.30]	0.15	-0.03	.974
Time	-0.03	[-0.09, 0.04]	0.85	-0.85	.399

To test if avoidant attachment style moderates the level of misunderstanding via FtF or CMC, a regression analysis was performed with the scores from the second measurement. For this regression analysis, the avoidant attachment style is considered as a moderator. The overall model was not significant, $R^2 = .07$, $F(5, 41) = 0.64$, $p = .672$. The outcome of the regression model is presented in Table 6. Importantly, there was no interaction effect between medium and avoidant attachment style.

Table 6. Linear model of predictors of dyadic adjustment (misunderstanding)

	B	[95% CI]	SE	*t*	*p*
Constant	1.39	[0.35, 2.42]	0.51	2.71	.010
Medium	0.21	[-0.36, 0.78]	0.28	0.75	.459
Avoidant Attachment Style	-0.28	[-0.46, 0.40]	0.21	-0.13	.898
Medium x avoidant attachment style	-0.41	[-1.31, 0.49]	0.45	-0.91	.366
Topic importance	0.15	[-0.21, 0.52]	0.18	0.85	.399
Time	0.04	[-0.04, 0.11]	0.04	0.90	.371

To test if anxious attachment style moderates the level of understanding via FtF or CMC, a regression analysis was performed with the scores from the second measurement. For this regression analysis, the anxious attachment style is considered as a moderator. The overall model was not

significant, $R^2 = .11$, $F(5, 41) = 1.04$, $p = .406$. The outcome of the regression model is presented in Table 7. Importantly, there was no interaction effect between medium and anxious attachment style.

Table 7. Linear model of predictors of dyadic adjustment (understanding)

	B	[95% CI]	SE	*t*	*p*
Constant	3.76	[2.93, 4.59]	0.41	9.14	<.001
Medium	-0.02	[-0.53, 0.43]	0.24	-0.22	.830
Anxious Attachment Style	<0.003	[-0.59, 0.01]	0.15	-1.98	.054
Medium x anxious attachment style	<0.004	[-0.40, 0.81]	0.30	0.69	.495
Topic importance	-0.05	[-0.28, 0.32]	0.15	0.12	.908
Time	<-0.004	[-0.08, 0.05]	0.03	-0.43	.671

To test if anxious attachment style moderates the level of misunderstanding via FtF or CMC, a regression analysis was performed with the scores from the second measurement. For this regression analysis, the anxious attachment style is considered as a moderator. The overall model was not significant, $R^2 = .12$, $F(5, 41) = 1.12$, $p = .363$. The outcome of the regression model is presented in Table 8. Importantly, there was no interaction effect between medium and anxious attachment style.

Table 8. Linear model of predictors of dyadic adjustment (misunderstanding)

	B	[95% CI]	SE	*t*	*p*
Constant	1.42	[0.43, 2.41]	0.49	2.89	.006
Medium	0.33	[-0.24, 0.90]	0.28	1.17	.248
Anxious Attachment Style	0.27	[-0.08, 0.63]	0.18	1.55	.129
Medium x anxious attachment style	0.36	[-0.36, 1.09]	0.36	1.02	.315
Topic importance	0.21	[-0.14, 0.57]	0.18	1.20	.143
Time	0.01	[-0.07, 0.09]	0.04	0.27	.069