The Role of Communication Channel and Familiarity in Organizational Environment: A Narrative Review

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ABSTRACT

The competitive working environment demands the collaboration of people who are masters in their specific domain and this fact sometimes leads to the cooperation of employees who are geographically distributed. In distant work, or in other words telework, Information and Communication Technologies (ICTs) are highly embedded, since they enhance the communication and the promotion of work between the distributed workers. The present study aims at investigating whether the communication channel and the degree of familiarity affect the quality of communication and task performance. More specifically, the differences between face to face and Computer-Mediated Communication (CMC) were discussed. Furthermore, a comparison between acquaintances or familiar people and strangers was realized. To that end, the findings of 36 published studies were compared and examined through a narrative review. The results indicate that in terms of both communication and task performance, the differences between the four conditions (face to face- CMC; friends- strangers) are not consequential. In addition, the communication channel was found to have a greater influence on task performance and communication quality compared to the degree of familiarity.

INTRODUCTION

The design of the Boeing 777 airliners was realized by geographically distributed virtual teams. More specifically, more than ten thousand team members, in more than a dozen countries worked together on the same project. The communication between the distant workers was mainly mediated by Information Communication Technology (ICT) and certainly by computers (Rainee and Wellman, 2012). The precedent term refers to those technologies that are used for accessing, gathering, manipulating and presenting or communicating information. The technologies could include hardware (e.g. computers and other devices); software applications; and connectivity (e.g. access to the Internet, local networking infrastructure, and video-conferencing). (Toomey, 2001, para. 3)

It is worth mentioning that this was the first plane in history that was constructed without using physical mock-ups. Virtual teams used virtual mock-ups from 2.200 computer terminals and the design procedure was significantly expedited by the use of these computer-assisted systems. So, it could be said that the success of the above project is based, to a great extent, on the use of ICTs since ICTs supported the distribution and the exchange of data among all the counterparts (suppliers, vendors, internal and external units), bringing together simultaneously members from different disciplines (engineering, finance, operations, manufacturing, suppliers). Furthermore, ICTs promoted the task coordination, as well as the connectedness among the distributed team members by encouraging the development of team cognition (Rainee and Wellman, 2012).

The design of Boeing 777 constitutes a great example that shows us the incorporation of technologies in organizational coordination and communication among geographically distributed workers. Occasioned by the above illustration, the present study aims at examining the quality of communication and task performance between distant workers, since we are confronted with a new phenomenon that gains ground day per day. To be more specific, the modern society, in combination with the highly competitive environment that exists in international organizations, requires the collaboration of people who are experts in a specific domain. However, except for the advantages, there are also many barriers that should not be neglected. Specifically, although the Boeing 777 was a successful example, the construction of the Boeing 787, that followed, was not characterized by the same triumph. The different parts,

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deriving from all over the world did not fit and sometimes did not arrive on time. Other problems were related to miscommunication between the counterparts due to the different languages they spoke and the different quality standards of each company (Rainee and Wellman, 2012). Broadly speaking, the collaboration of experts implies that these people may not know each other. So there is a lack of common ground, which is fundamental for the effectiveness of communication (Clark, 1996). Moreover, as it has been already said, their communication is mainly mediated by computers. Computer Mediated Communication (CMC) has been accused of lacking social and non-verbal cues, compared to face to face communication (Walther, 1992). But non-verbal cues can convey a variety of information that enriches the quality of communication. By extension, according to previous studies, CMC has been characterized as inappropriate medium for communicational purposes (Rice, 1984).

Taking everything into account, in the present study, it is going to be examined through a literature review whether the absence of common ground, familiarity and physical closeness, which characterize distant workers, can affect the quality of organizational communication and consequently, the effectiveness of task performance and decision-making. Subsequently, based on previously published studies, it is going to be investigated whether the communication channel, and more specifically, CMC compared to face to face, has an influence on the quality of communication, task performance and decision making, and if so, how?

Theoretical Background

Computer-Mediated Communication: a communicative revolution

The rapid growth of Information and Communication technologies (ICTs) has induced radical changes concerning all the aspects of human life. Without doubt, recently there is a shift from face to face communication to Computer Mediated Communication (CMC). New media or digital media has penetrated into our daily routine and has become an integral part of our life (Castell, 2004). More specifically, Castell (2004) chose to paraphrase an utterance of Tim Berners-Lee the inventor of World Wide Web, who has been characterized by Time magazine as one of the greatest minds of our century (Tim Berners-Lee, 2000), and he declares that "the Internet is less a technological fact than a social one". That is, we should focus more on the social changes that the Internet has brought about, than examining it merely as a technological

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achievement. By extension, nowadays several forms of daily life interactions often take place via these new media. We refer to communication that exists through communication technologies and mainly through computer as Computer-Mediated Communication (CMC). Several forms of interaction of the daily life that are mediated by computers are: learning at a distance, online dating or the collaboration between geographically distributed co-workers; as the example of Boeing has indicated. Consequently, Spitzberg (2006) defines the term Computer-Mediated Communication as "any symbolic text-based interaction conducted or facilitated through digitally based technologies". In other words, according to Simpson (2002), CMC is an umbrella term which is associated with human communication via computers.

However, several studies have mentioned CMC as an inadequate communication medium (see Rice, 1984; Hiltz, Johnson and Turrof, 1986) compared to face to face communication. According to Information Richness Theory (Daft and Lengel, 1986), different media have different characteristics that enhance or constrain the quality of communication. These characteristics are related to the immediacy of feedback, the transmission of multiple cues, the use of natural language and finally the establishment of a personal focus (Lengel and Daft, 1988). As a case in point, text-based CMC, like chat, is characterized by the lack of natural language and non-verbal cues since there is no eye-contact and this can mitigate the quality of communication. In contrast, video-conferencing is much closer to face to face communication, a lot of cues are available, the feedback is immediate and the interactants use their natural language, enhancing the nature of interaction. Finally, the more the medium fulfills the above requirements, the richer it can be considered. Thereafter, for the most part, face to face interaction is richer than Computer-Mediated interaction since more cues are available and at the same time feedback is quicker and more spontaneous. So, according to Information Richness Theory, CMC is a lean medium which contributes to miscommunication, harming the quality of interaction. However, in this part, it is important to be mentioned that the majority of the CMC studies are old and they refer mainly to text-based CMC, such us Chat and SMS. Even though, nowadays, Computer-Mediated Communication has become more interactive and direct. That is, it is essential to take into account the changes in CMC from text-based communication to video-conferencing and video-calling communication, like Skype, where a variety of both verbal and non-verbal cues is available.

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CMC versus F-t-F

A plethora of previous studies has tried to compare Computer-Mediated Communication with face to face communication. Characteristically, Walther (1992) has argued that the most pronounced difference between CMC and face to face communication is the absence of non-verbal cues that characterizes the former which, in turn, contributes to misunderstandings and miscommunication. Nevertheless, it is necessary to specify again that most of the studies deal with text-based CMC. In the following part, several theories that have accused CMC of being a lean medium are discussed.

The social presence theory argues that the fewer cues we have at our disposal, the less personal the communication mode is going to be (Short, Williams and Cristie, 1976). That is, CMC, being low in presence, incites the interactants not to pay as much attention to each other (Walther, 1992). Additionally, social context cues are not salient in CMC settings (Sproull and Kiesler, 1986). Walther (1992) has defined social context cues as the non-verbal behaviors of the participants in combination with cues deriving from the physical environment in which the interaction takes place. Consequently, the absence of these cues can lead to negative behaviors, such as "flaming"; a kind of antisocial online behavior, where people use an offensive and insulting language (Moor, 2007), (see Kiesler, Siegel and McGuire, 1984) and this can reduce the quality of communication. Finally, Media Richness Theory (Daft and Lengel, 1984, 1986; Daft, Lengel and Trevino, 1987; Trevino, Daft and Lengel, 1990) suggests that the quality of communication across different media channels differs, and the difference is based on a number of available cues. So, text-based CMC is not a rich medium, due to the absence of non-verbal cues. On the contrary, it can be characterized as a lean medium responsible for the mitigation of the quality of interaction. The lack of non-verbal cues in text-based CMC conditions is also negatively related to the grounding process, which is discussed in detail throughout the next section. In simple words, "grounding" refers to the knowledge that is common between two or more people, and how this shared knowledge plays an important role in the quality of communication (Clark and Brennan, 1991). "Grounding" is enhanced by the presence of verbal and non-verbal cues. However, CMC has been accused of lacking cues. So, face to face interaction can be considered as superior since more cues are available and thereafter it could be said that grounding is more difficult to achieve when communication is mediated by computers

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(Clark and Brennan, 1991).Furthermore, Media Synchronicity Theory (Dennis and Valacich, 1999) claims that synchronicity is also a fundamental factor that plays a very important role in the effectiveness of communication. Dennis and Valacich (1999, p. 5) have defined synchronicity as "the extent to which individuals work together on the same activity, at the same time; i.e. have a shared focus". In CMC compared to face to face communication, synchronicity is lower. This can result in extra cognitive effort and misunderstandings (Munzer and Holmer, 2009). Last but not least, the immediacy of feedback is also crucial, as it influences mutual understanding as well as the grounding processes (Munzer and Holmer, 2009). Clark and Brennan (1991) have indicated that only the media that provide people with the opportunity for immediate feedback can encourage the negotiation of mutual understanding. So, based on the fact that in Computer-Mediated settings, there is also an absence of immediate feedback, CMC is accused again of being a lean medium.

In conclusion, another prevalent characteristic of online settings is the anonymity that can characterize the interactants. According to Wikipedia's definition, anonymity is "the state of an individual's personal identity, or personally identifiable information, being publicly unknown". More precisely, in accordance with Burkell (2006, pp. 202), "anonymity is the condition of being unidentified, by name, by being seen or by history of action". Jessup, Connoly, &Galegher (1990) have indicated that anonymity can contribute to the quality of communication since it allows the interactants to feel more freedom and to express their feeling and ideas without restraints, without the anxiety of being criticized or without the fear of reprisal (Valacich, Dennis, &Nunamaker, 1992). Additionally, previous studies that examined the role of anonymity in CMC groups have found that it can foster and enhance the communication, giving everybody a voice. The reasoning behind this outcome emphasizes on the fact that anonymity is first of all capable of minimizing status differences. Consecutive, the members divested of social pressure, feel more conformable and free to communicate and elaborate their ideas and to contribute to the discussion, as well as it liberates them from a fear of retribution (Rains, 2007). In order to comprehend better, the role of anonymity in virtual environments the Adaptive Structuration Theory (AST; DeSanctis and Poole, 1994; Poole and DeSanctis, 1990) is used. In simple words, the purpose of AST is to examine how groups use technologies and later on, how groups can be affected by technologies. Two contradicted hypotheses, based on AST, have been developed. The benevolence hypothesis focuses on the "equalization phenomenon" (DeSanctis and Gallupe,

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1987; Dubrovsky, Kiesler and Sethna, 1991; Rains, 2005; Siegel, Dubrovsky, Kiesler and McGuire, 1986) that has been mentioned above, and supports that anonymity affects positively the communication and the outcomes of a group. On the other hand, the discounting hypothesis proposes that anonymity undermines both the quality of communication and the quality of contributions (Dennis, 1996; El-Shinnawy and Vinze, 1997).

The purpose of the above paragraphs was to clarify the differences between Computer Mediated Communication and face to face communication. The next part is going to put emphasis particularly on the role of CMC within organizational environment, which is less personal and more task-oriented and how CMC is associated with organizational communication. Before moving on to the next part it is essential to define the term organizational communication. Daft (1997) has defined organizational communication as "the process by which information is exchanged and understood by two or more people, usually with the intent to motivate or influence behavior". In some cases like distant work, face to face interaction is impossible. In that situation technology appears to fill the gap since CMC can contribute to the connection across multiple conversations (Marwick, 2011).

CMC within organizational environment; working together beyond boundaries

The globalization of modern society has resulted in a new term in work industry, associated with the growth of technology; telework, or telecommuting. In simple words, these terms refer to people who work on the same project, having the same goal, but who are geographically distributed and who probably don't know each other. Telework is a form of virtual work which in general entails working away from the conventional workplace and it is also supported by computer-based technologies. Within this context, work can be done anytime. It is rather an anywhere activity than "a place to go" (Tietze, 2002). Nowadays, the demanding and competing working environment requires the collaboration of people who are masters in their domain and sometimes this leads to organizations and employees who are physically distributed. Consequently, ICT is increasingly embedded in this novel way of working in order to promote the communication among the employees. Additionally, these employees usually work in virtual organizations. That is a collection of geographically distributed people whose interaction is mediated by an electronic form of communication and rely on lateral, dynamic relationships for

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coordination (DeSanctis and Monge, 1998). A characteristic example is the case of the development of the two Boeings that was mentioned in the introduction. Except for the collaboration of masters all around the world, virtual organizations and distributed work are flexible and dynamic (Boudreau, Loch, Robey and Straub, 1998, Cascio, 2000) and they abolish the notion of space and time (Burn and Burnett, 1999; Jarvenpaa and Leidner, 1999), making the most of the properties of new technologies.

There is no doubt that effective communication is essential for the success of an organization, whether it is a virtual or a traditional organization. So, the next question is how the properties of these new technologies interact with the organizational environment? Walther (1996), based on previous studies has defined CMC as an inappropriate medium, or in other words, as a lean medium, that undermines the quality of communication. However, those previous studies that examined CMC emphasized on personal communication. Within organizations, the aim of CMC is to improve the coordination of tasks between people that are geographically dispersed (see i.e. Hiltz and Turoff, 1978). Workers' first priority is to accomplish the task, to get the job done and not to develop personal relationships with their co-workers. By extension, CMC is more task-oriented, in comparison with face to face, and probably this happens due to the lack of cues and of interaction in a more personal level (Walther, 1996). Furthermore, as already mentioned, exactly this lack of non-verbal cues contributes to the development of an egalitarian environment, where every member has equal opportunities to participate in the discussion, without being biased and motivated by status differences (Walther, 1996). Anonymity is also another crucial characteristic of Computer-Mediated Communication that liberates the employees and incites them to express themselves freely (Valacich, Dennis and Nunamaker, 1992). A case in point is a study conducted by Watson, DeSanctis and Poole (1988), whose result revealed that when coworkers feel free to express their thoughts without the fear of reprisal, the decision making is influenced in a positive way. In another study conducted by Olaniran (1994), it was found that the decision quality was better when he used anonymous CMC groups for brainstorming, compared to face to face groups. So, taking everything into account, we could say that CMC can enhance the democratization of the working environment; this point of view is perfectly summarized in a quotation retrieved by Walther (1996, p. 14) "CMC allows the anonymous majority to rule by plurality". Furthermore, distributed workers can be considered as anonymous. They usually do not know each other and there is no direct

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communication among them. The fact that there are commonly no personal relationships between them means also that they usually do not share a lot of personal information; they just share the same goal and for the sake of it, they have to communicate and collaborate adequately. This absence of personal interaction makes them sometimes unidentifiable, enhancing the above statement, that is; geographically distributed workers can be considered as anonymous. So, taking into account what has been already mentioned, within organization context anonymity is a critical concept which could contribute to group collaboration and decision-making (Rains, 2007) as it creates opportunities for all members to participate equally in an open dialogue without restraints and prejudices. That is, under the appropriate circumstances, anonymity or in general, the lack of familiarity can be an important factor that contributes to the creation of an egalitarian environment which is indispensable for the success of an organization.

To sum up, above paragraphs focused on the communication channels, trying to comprehend if the nature of CMC fits the demanding working context. McGrath (1984) has argued that the lack of cues and identification that is salient in CM conditions may lead to miscommunication and especially as far as decision- making tasks are concerned.So, it could be said that the lack of cues, of social presence, and of personal communication is not always beneficial and functions as a barrier that prevents the adequacy of communication. On the contrary, several studies have proved that people in CMC groups offer more opinions and contribute more proposals and finally they agree more with their decisions and strategies as opposed to face to face groups (see, Hiltz, 1975; Hiltz and Turoff, 1978). Rice (1986) has also mentioned that CMC working groups are very effective since the medium itself reduces the status differences and allows the equal participation of all members. Finally, the lack of non- verbal cues combined with the absence of personal interaction prompt people to emphasize on their work, without getting involved into conversations that are irrelevant to the task, aiming at creating or maintaining social relationships (Walther, 1996). That is, the proven task-oriented nature of CMC may convert it into an appropriate medium for distant workers, whose primary purpose is to accomplish their work. There is no doubt that the results of the previous studies are contradictory. By extension, the present paper aims at examining through a systematic literature review, whether CMC is an appropriate communication channel within working environment by comparing Computer-Mediated Communication with face to face communication.

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Common ground, grounding & organizational communication

Throughout the previous part, a comparison between face to face communication and Computer-Mediated Communication was ventured in order to understand if CMC is a suitable medium for organizational communication. The literature proposed that sometimes the properties of CMC could convert it into an appropriate channel for task-related conversations. The next step is to examine if the nature of the relationship between the coworkers, meaning the degree of their familiarity, has also an influence on the quality of communication and by extension on their performance, since effective communication is vital to the success of organizations. The kind of relationship can be considered as a very important variable since distributed workers are usually just strangers.

According to Wu and Keysar (2007), it is common sense that the more information people share, the better they communicate. Additionally, Nickerson (1999) has suggested that in order to communicate efficiently with another person it is a prerequisite that one must have an accurate idea of what they do and do not know that it is pertinent to the communication. Nickerson's utterances reflect the concept of common ground which refers to the knowledge that interactants have in common and they are also aware that they have it in common (Clark, 1996). By extension, the process of constructing shared knowledge and shared understanding is defined under the term of "grounding" (Clark and Brennan, 1991). The grounding process is a collaborative process which is developed step by step during the interaction between people, and consequently, the more cues are available the less effort and time is needed to construct common ground. Common ground is also crucial in order to achieve mutual understanding (Clark and Carlson, 1982). If the interactants are unfamiliar the communication will break down due to the absence of common ground and in turn, of mutual understanding, which is a prerequisite in order to have a successful conversation and to manage efficiently the amount of information (Clark and Carlson, 1982). In addition, Cornelius and Boos (2003) support that mutual understanding is not only an important factor that enhances the quality of communication but also an important indicator in terms of satisfaction with the group and decision process. Park (2008) also characterizes shared knowledge as an important factor which contributes to understanding group cognition. Group cognition is connected with the term grounding, common ground or shared understanding and it refers to the "structures of collective meaning that emerge in and coordinate

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the activities of a group". (Akkerman, Van de Bossche, Admiraal, Gijselaers, Segers, Simons, Kirschner, 2007, pp. 40). In other words, we conceptualize group cognition in terms of developing mutual understanding among group members, concerning the values, the needs and the problems of the work, in order to improve the quality of communication and subsequently to organize better all the activities that are task-related (Clark & Brennan, 1991; Hutchins, 1995). So, previous studies have examined whether there is correlation between shared knowledge and group performance and they found out that effective communication and by extension effective performance are positively related to the shared knowledge between the members. Consequently, common ground is essential in order to communicate adequately (Clark and Carlson, 1982; Clark and Marshall, 1981). Continuously, Borgatti and Cross (2003) use the term relational embeddedness, to describe the extent to which a member is well connected to the social life of an organization, focusing on the role of strong ties between participants which, subsequently, leads to the development of shared understanding and common ground.

However, the results are contradictory. Within organizational environment, the lack of familiarity and personal interaction can be sometimes beneficial (see Parks 1982), in accordance with the view that less familiarity contributes to more task orientation, since people do no waste their times talking about non task-related topics, but they focus on their work. Another problem that may occur is the information redundancy problem. That is, people tend to seek information mainly from familiar sources. But then overlapping is inevitable, meaning to cover a subject that someone else has already covered or to have a lot of ideas in common with someone else, as their knowledge and their experiences are similar to a great extent. So, they cannot benefit from the novel knowledge that a new, stranger source can provide them with (Granovetter, 1973). Innovative and novel ideas are crucial for the success of an organization and familiarity may undermine the quality and the originality of brainstorming. In a study conducted by Savitsky, Keysar, Epley, Carter and Swanson (2011) the quality of communication between friends and strangers was tested. The authors found that friends did not communicate better than strangers. Moreover, their findings indicated that egocentrism occurs more often with a friend rather than with a stranger and that people are less capable of correcting these egocentric tendencies when they communicate with a friend in comparison with a stranger since friends overestimate their ability to communicate successfully. Egocentrism is defined by Kruger, Parker Epley and Ng (2005) as people's difficulty to overpass their own subjective perspective about a concept an

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event, a stimulus or a message, which is based on their own personal experiences and try to imagine how this incident is conceptualized by someone else who does not share the same knowledge and experiences as them, by someone whose background is completely different. The above results are also confirmed by a study conducted by Wu and Keysar (2007) who found that sharing more information tends to encourage egocentric tendencies, reducing the effectiveness of communication. To conclude, previous studies that have focused on the effective performance of groups within organizations have indicated that familiarity among team members is a crucial factor that affects groups' performance in a positive way (Goodman and Leyden, 1991; Watson, Michaelsen and Sharp, 1991). But on the other hand Adams, Roch and Ayman (2005), examining the relationship between the communication medium and member familiarity they found out that for CM groups, more familiarity results in less decision accuracy.

As far as the degree of familiarity and its influence on the quality of communication and task performance are concerned, the results of previous studies are again contradictory. For the above reason, in the present paper, a systematic literature review is used in order to comprehend which indicators of communication quality and task performance are positively or negatively related to member familiarity.

Development of Research Questions

Berlo's (1960) Source- Message- Channel- Receiver Model of communication, suggests that four variables can affect the effectiveness and the quality of communication the sender, the channel, the message and the receiver. The present study emphasizes on the channel, by comparing face to face communication with Computer-Mediated Communication, in order to understand if there are differences between the two media, which in turn can affect the quality of communication, as well as on the sender and the receiver, and more specifically on the degree of familiarity that exists between them. The theoretical background showed that CMC is a less effective communication channel compared to face to face interaction based on the fact that less verbal and non- verbal cues are available. On the other hand, exactly this absence of cues reduces status differences, promoting an egalitarian working environment where everybody has a voice. By extension, people can contribute to the discussion freely. That is, more alternative ideas are promoted, enhancing the performance of the task. Last but not least, previous studies have

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accused CMC of being less personal compared to face to face communication. However, the task- oriented and less personal nature of Computer-Mediated Communication can be beneficial in working environment since workers focus on the task that has to be done without being distracted by non- task related conversations and activities. Still though, the communication between distant workers occurs mainly electronically, without face to face interaction. So, the first aim of the present paper is to examine through a literature review the effects of communication channel on the quality of communication and simultaneously on task performance.

Task performance is considered as an aggregate of different variables, including decision accuracy, decision time, quality and effectiveness of communication, quality of decision making and satisfaction with the interpersonal process and the outcomes. Comparing face to face condition with CMC condition we expect to find that for the former the task performance will be better based on the task-oriented nature of the medium that enhances people to remain focused on their work and more concentrated. Additionally, the lack of immediate feedback cues will stand for the benefit of face to face condition since people are predicted to spend less time to reach a decision. Moreover, the absence of non-verbal cues will limit the satisfaction with the process for CMC condition

Research Question 1: Is there a benefit for face to face condition, compared to CMC condition, in terms of task performance, satisfaction with the process and decision-making time?

Having examined the influence of the medium on task performance the next step is to comprehend if the level of familiarity can also affect the effectiveness of performance and the quality of communication. The literature suggested that egocentric tendencies emerge mainly between friends and this can reduce the quality of communication, since familiar people sometimes, due to egocentrism overestimate their ability to convey a message. Furthermore, personal relationships can divert workers' attention. People, motivated by their shared experiences may lead to conversations that are not relevant to their task. However, common ground and shared knowledge have been found to encourage shared understanding. Consequently, the lack of common ground between the sender and the receiver can have at the same time either a negative or a positive influence on the quality of communication and task

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performance. In remote work, the employees are usually strangers since they are geographically distributed and they do not have the opportunity to meet each other and to develop personal relationships.

So, the second target of the present paper is to investigate previously published studies in order to understand how the degree of familiarity is related to all the indicators that constitute the variable of task performance. In general, it is expected that member familiarity will have a positive influence on the time of decision making, as well as on the satisfaction with the interpersonal process. However, as far as the outcomes of the task performance are concerned, we expect to find out an advantage for the people who are not familiar.

Research Question 2: Is there a benefit for friends compared to strangers in terms of task performance, satisfaction with the process and decision-making time?

METHOD

The present paper uses a literature review in order to examine the research questions. Hart (1998, p. 13) has defined literature review as "the selection of available documents (both published and unpublished) on the topic, with certain information, ideas, data and evidence written from a particular standpoint to fulfill certain aims or express certain views on the nature of the topic and how is it to be investigated, and the effective evaluation of these documents in relation to the research being proposed". However, the search strategy of the current paper was to identify only published studies, since the access to unpublished research papers was not possible. The corpus of the studies has emphasized on the effect of both common ground and communication channel in the adequacy of communication, focusing on group communication and task performance.

After the collection of the articles, a narrative review was used in order to conceptualize the findings and to analyze the results. According to Orlitzky, Schmidt and Rynes (2003, p. 410), narrative review is a literature review that examines past findings, verbally or conceptually, in order to come to a conclusion. The target is to compare the results of different scientific papers looking for patterns of factors linked with one or another outcome (Slavin, 1995), without involving statistics.

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Search for relevant studies

The initial search included the querying of the following journals: the Journal of Computer Mediated Communication and the Journal of communication research and the collection of the literature can be distinguished in three basic phases. During the first phase, the two journals were scanned for relevant articles. The whole Journal of Computer-Mediated Communication was examined, from March 2005 to January 2013, as well the articles of the Journal of Communication Research, after 1990. The abstracts of the papers were inspected and key terms and words were identified in order to find the most appropriate academic articles. Throughout this first phase, 23 studies were retrieved from the Journal of Communication Research and 10 studies from the Journal of Computer-Mediated Communication. The next phase was a more detailed examination of the collected studies, based not only on the abstract but also on the theoretical background and the results. At this point, several studies that were finally irrelevant to the topic were excluded. During the last phase, the target was to identify the independent and dependent variables in order to comprehend if the studies were going to be suitable for the present paper. In the present paper, there are two independent variables, the degree of familiarity and the communication channel, and more specifically, face to face communication compared to Computer Mediated Communication, while the dependent variables are the quality of communication and task performance. After that, several articles were excluded again, since they did not satisfy the requirements. Finally, eleven studies were retrieved from the Journal of Communication Research (Barkhi, 2005; Cho & Lee, 2008; Corman& Bradford, 1993; Cornelius & Boos, 2003; Knobloch, Solomon &Theiss, 2006; Park, 2008; Rains, 2007; Theiss& Solomon, 2006; Walther, Anderson & Park, 1994; Winstead, Derlega, Lewis, Sanchez-Hucles& Clarke, 1992; Yuan, Fulk, Monge& Contractor, 2009), and only one study was retrieved from the database of the Journal of Computer-Mediated Communication (DeSanctis & Monge, 1998). Since a number of articles was not sufficient, a key term searching in the database of Google Scholar search engine (www.googlescholar.com) followed. A number of search terms were used, including common ground, CMC within organizations, organizational communication, egocentrism, friends versus strangers. For example, the key phrase "friends vs. strangers and decision making" led to the following studies: Funder & Colvin, 1988; Shah & Jehn, 1993; Jehn& Shah, 1997, which were considered as quite relevant to the subject. Another key phrase that was used included the terms "friends vs. strangers, who communicates better" (Fussel &

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Crauss, 1989; Wagner & Smith, 1991). Continuously, since a lot of studies attempted a comparison between strangers and dating couples, it was worthy to use it as well, as a key term (Fry, Firestone & Williams, 1983). Finally, the key phrase "miscommunication and medium channel" led to the below paper; Byron, 2008.

Throughout the initial search for literature, when the main goal was to develop the research questions and to collect information related to the topic in general, two interesting concepts that can have an influence on the quality of communication emerged; that is, common ground and egocentrism and by extension the above terms were used as search terms. To be more specific, two key phrases were used: "the role of common ground in comprehension", (Keysar, Barr, Balin&Paek, 1998) and "egocentrism in communication", (Savitsky, Keysar, Epley, Carter & Swanson, 2011). Eventually, the phrase "communication medium and member familiarity" revealed also a very interesting study which was conducted by Adams, Roch& Ayman, 2005.

The last part of the searching process focused on the careful examination of the above articles in order to find out further studies from their references lists. Characteristically, the paper of Kruger, Epley, Parker & Ng (2005) led to a study conducted by Ku (1996). Similarly, Leyden & Goodman (1991) led to an article written by Gruenfeld, Mannix, Williams & Neale (1996) and the study of Fry, Firestone & Williams (1983) led to the paper of Morgan & Sawyer (1967). To conclude, occasioned by the article of Weisband& Atwater (1999), I was looking for a paper written by Straus (1998) since it was included in the references list. However, using the author's name as a search key term a more suitable article was retrieved, written by Straus & McGrath (1994). At the end, 36 articles were selected as the most relevant to be discussed through the present paper. More precisely eight studies examined the effect of the communication channel (Straus & McGrath, 1994; Walther, Anderson and Park, 1994; Ku, 1996; DeSanctis&Monge, 1998; Weisband& Atwater, 1999; Barkhi, 2005; Sarrina Li, 2007; Baninajarian, Abdullah &Bolong, 2011), twenty five papers tested the impact of familiarity on task performance and communication quality (Morgan & Sawyer, 1967; Fry, Firestone & Williams, 1983; Funder & Colvin, 1988; Fussel& Krauss, 1989; Goodman & Leyden, 1991; Wagner & Smith, 1991; Winstead, Derlega, Lewis, Sanchez-Hucles& Clarke, 1992; Corman& Bradford, 1993; Shah &Jehn, 1993; Gruenfeld, Mannix, Williams & Neale, 1996; DePaulo, Charlton, Cooper, Lindsay &Muhlenbruck, 1997; Jehn& Shah, 1997; Keysar, Barr, Balin&Paek, 1998; Park, Levine,

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McCornack, Morrison & Ferrara, 2002; Knobloch, Solomon &Theiss, 2006; Theiss& Solomon, 2006; Rains, 2007; Wu & Keysar,2007; Byron, 2008; Cho & Lee, 2008; Hope, Ost, Gabbert, Healey &Lenton 2008; Park, 2008; Schober& Carstensen,2009; Yuan, Fulk, Monge& Contractor, 2009;Savitsky, Keysar, Epley, Carter & Swanson,2011) and finally three scientific papers investigated the interaction between the medium and familiarity (Cornelius & Boos, 2003; Adams, Roch& Ayman, 2005; Kruger, Parker, Epley& Ng, 2005).

Criteria for relevance and the narrative review

The final studies were judged as the most relevant for the meta- analysis have the following characteristics. Two independent variables were defined, the communication channel and the degree of familiarity, while the dependent variable was related to group task performance. After having gathered the necessary articles, two tables, one for each independent variable were constructed, which aimed at summarizing the most important findings, providing the reader, at the same time, with the information about the authors, the date that the paper was published, the independent and the dependent variables as well as the sample of the study. The next step was to examine each dependent variable separately and try to understand if there is a benefit for one out of the two conditions; face to face communication- Computer Mediated Communication, Familiar people- strangers. To facilitate the whole procedure, a subcategory was developed which summarized if there was a significant advantage for one condition (+ represents an advantage for face to face/ friends condition, - represents a benefit for the opposite conditions, meaning CMC/strangers conditions, while 0 stands in for no significant differences between the two conditions). After that, the findings were compared in order to come with conclusions. To be more specific, the aim was to find out if on average there was an advantage for one specific condition by calculating how many studies out of the total subset revealed differences or not between the two conditions that we examined.

RESULTS

The table below presents in a chronological order eight published studies that aimed at examining the effect of communication channel, and more specifically they compared Computer-Mediated Communication with face to face communication, in order to understand if the medium can have an influence on the quality of communication as well as on task performance.

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Summary of communication channel studies with a comparison between face to face and Computer-Mediated Communication

Study	Sample	Independent Variable	Dependent Variable	Findings	Advantage For f-t-t	Final outcome
Straus& McGrath, 1994	240 undergraduate students of Illinois University	Communication medium (CMC or face to face discussions)	-Group performance (effectiveness, productivity, average quality)	No differences were found in effectiveness, idea quality and decision quality. Significant differences concern the amount of time needed to complete the task and in this case, face to face groups have an advantage.	0	0
Walther, AndersonandPark, 1994	Articles related to Computer Mediated Communication (21 for socioemotional tone and 14 for	Communication medium (CMC vs. face to face)	Degreeofsocioemotionalcommunication	No differences were found between the two conditions. The time and not the medium affected the degree of socioemotional communication.	0	0

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negative uninhibited communication)

Ku, 1996	Headquarters of a large, geographically dispersed telecommunications company in Maryland (*N*=191)	Amount of use of emails, socioemotional use. (Still, though there is no direct comparison between f-t-f and CMC condition, the researcher aimed at finding out if	-Decision making -quality of work - decision participation	Participants reported that email has improved the quality of their work and the effectiveness of their decision. Email is mainly used for task-related conversations. A positive relationship was found between the amount of use and the perceived quality of work, decision participation and effectiveness. A negative but non-significant relationship was found between the socioemotional use and decision participation. Additionally, socioemotional use was negatively related to the quality of decision-making.	-	-
					-	
					-	

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		CMC can improve the quality of work when face to face interaction is missing).				
DeSanctis&Monge, 1998	Articles on synchronous and asynchronous electronic organizational communication	Communication medium (CMC vs. face to face)	Communication volume and efficiency -message understanding -task performance	Problem-solving is faster for face to face condition compared to CMC. For CMC groups are more difficult to comprehend the information and to manage the feedback. However, the lack of visual cues can improve the communication procedure since people are not influenced by prejudices and stereotypes. Thereafter, they focus more on the message itself. The literature revealed that virtual groups are more effective in divergent thinking tasks	+ + -	+

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				compared to traditional groups.		
Weisband&Atwater, 1999	105 business students	Communication medium (CMC vs. face to face)	-Rating of others' contributions -actual contribution of self/others	Face to face groups tended to be based on their interpersonal relationships to evaluate others while CMC groups were based on the actual contributions of the others, relying more on their performance. Actualcontributionswerenotdifferentbetweenthetwoconditions.	- 0	0
Barkhi, 2005	96 advanced college students	Communication medium (CMC vs. face to face), incentives (group-based vs. individual-based)	-Performance -deviation from grand coalition -truthfulness of information exchange -decision strategies	Performance of CMC groups was lower when the incentive was group-based but when the incentive was individual-based, no significant differences were found between the two conditions. Additionally, when the incentive is individual-based the medium did not affect the strategies that members employed either the amount of deviation from the grand coalition. The differences related to the truthfulness of information between the two conditions were not	0 0 0 0	0

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				significant. Face to face group were not less frustrated with the process		
Sarrina Li, 2007	51 students of the National University in northern Taiwan	Communication medium (CMC vs. face to face)	Communication quality - group outcomes -time	Face to face groups were found to perform significantly better than CMC groups as far as the problem analysis and criteria establishment are concerned. However, in terms of objective group outcomes, no differences were found. Face to face groups communicated more efficiently but they did not have better outcomes. CMC groups needed more time to complete the task.	+ 0 +	+
Baninaja rian, Abdullah &Bolong , 2011	Academi c and non-academi c executiv es of Malaysia Universit y, who use email in their	Use of email in organiz ational commu nicatio n	Task performance (decision quality, decision time, consensus, communication satisfaction)	Using email does not negatively affect the quality of performance (47.7% of the participants reported a high level of task performance). 30% of the participants perceived email high in richness as opposed to 4.2% who perceived it low in richness. The findings do not support the idea that CMC contributes to lower task performance.	0	0

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activities

Additionally, in the table below, three studies that have discussed the interaction between member familiarity and communication channel, meaning face to face communication compared to Computer Mediated Communication are presented. The results are displayed initially in chronological and then in alphabetical order. Even though the amount of the interactive studies is not sufficient, they are still very important since they provide us with more information about which of the two factors, the channel or the degree of familiarity, is more important as far as the quality of communication and the task performance are concerned.

Summary of interactive studies between communication channel and member familiarity

Study	Sample	Independent Variable	Dependent Variable	Findings	Advantage for f-t-f	Advantage for friends
Cornelius &Boos, 2003	240 students attending a German University	Communication medium (CMC vs. face to face), degree of familiarity (identifiable, familiar and friends)	-Mutual understanding, coherence -satisfaction with the process -task orientation	Coherence was found to be lower in CMC groups (without training) than face to face groups. Task orientation was found to be lowest in identifiable groups. Finally, satisfaction with the process was higher in face to face groups.	+ + +	0 0 -
Adams,	79	Member	-Decision	For CM condition	+	-

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Roch&Ayman, 2005	groups of undergraduate students in two Midwestern Universities	familiarity, Communication medium (CMC vs. face to face0	time, Member satisfaction-decision accuracy	-	a negative relationship was found between member familiarity and decision time. Familiarity decreased the decision time but only for CM groups. The medium and not the level of familiarity predicted satisfaction, with face to face groups being more satisfied with the medium and the process. For CM groups, member familiarity led to less accurate decisions.	+	0
						0	-
Kruger, Parker, Epley&Ng, 2005	154 pairs of University of Illinois	Communication Medium (e-mail, voice only, face to face), Kind of relationship	Accuracy of communication		Accuracy, for both friends and strangers, was higher in the voice condition than email condition. A significant	+	0

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(friends vs. strangers)	interaction between the medium and the accuracy was found. Familiaritydidnotaffecttheresults.

Communication channel and task performance

On a large scale, the literature review revealed that there are no determinative differences between face to face and CMC condition (Straus & McGrath, 1994; Weisband& Atwater, 1999; Walther, Anderson & Park, 1994; Barkhi, 2005, Baninajarian, Abdullah & Bolong, 2011). However, an advantage for face to face communication was found (Kruger, Parker, Epley& Ng, 2005; Adams, Roch & Ayman, 2005; Sarrina Li, 2007; Cornelius & Boos, 2003; DeSanctis & Monge, 1998). Additionally, only one out of eleven studies clearly supported the idea that CMC can be considered as a superior channel compared to face to face (Ku, 1996). In this part, it is important to be mentioned that the above findings that present face to face mode as a more appropriate channel for organizational communication are mainly based on the time needed to complete the task and on the satisfaction of group members with the whole procedure as well as with the outcomes of their collaboration and not with the task performance itself. That is, not task performance, but other variables can be significantly affected by the communication channel. In the following part the indicators that summarize the concept of task performance is going to be discussed thoroughly.

Time to complete the task and group satisfaction with the process

Straus and MacGrath (1994) found out that even if there are no significant differences between the two conditions, in terms of the quality of ideas as well as in terms of the quality of the final group outcomes, CMC groups take usually longer to accomplish the task. Their results are consistent with those of a study conducted by Sarrina Li (2007), in which it was indicated that CMC groups needed more time in comparison with face to face groups in order to accomplish their work. In parallel, according to DeSanctis and Monge (1998), when groups are confronted with difficult problem-solving, face to face groups are significantly faster than groups that belong to CMC condition. A possible explanation is that the lack of non-verbal cues hinders the

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effectiveness or the directedness of communication and the comprehension process. So, the employees need more time to manage the information that they receive in order to come to a conclusion. Moreover, there is a lack of immediate feedback, which in turns contributes to the delay of the procedure in general (DeSanctis and Monge, 1998). Thereafter, the results concerning the absence of non-verbal cues, which characterizes the online settings, are contradictory. Characteristically, in the same study mentioned above (DeSanctis and Monge, 1998), the authors mentioned that exactly the absence of cues can improve the quality of communication and simultaneously enhance the development of an egalitarian working environment since the workers are liberated by prejudices and stereotypes. Status differences do not exist and personal communication is limited. Consequently, they focus on their task, without being involved in discussions which are not task-related.

Two studies reported that face to face groups are usually more satisfied both with the communicational process and with the outcomes of their work (Cornelius and Boos, 2003; Barkhi, 2005). To be more specific, the formers found out that satisfaction with the process was higher for face to face groups while the latter, based on his results, proposed that face to face groups were less frustrated with the process. However, he underlined that the differences between the two conditions were not significant. In addition, Adams, Roch and Ayman (2005), tried to conceptualize how the communication medium interacts with member familiarity, in order to predict their effect in task performance. They found that the medium is accountable for the satisfaction process and not the degree of familiarity among group members. In other words, they ascertained that face to face groups are more satisfied both with the communication channel and with the process of their collaboration. To conclude, based on the results of the above studies, we could say that the immediate feedback, in combination with the presence of verbal and non-verbal cues, that characterize the collocated work, can have a positive influence on the time needed to accomplish a particular task, as well as on the satisfaction with group process. That is, face to face groups need less time and they are often more satisfied both with the working process and the group outcomes.

Task performance; effectiveness, idea quality, quality of performance, group outcomes

Three studies have indicated that the communication channel is not responsible for the quality of the performance and for the effectiveness of the group. The findings of Straus and McGrath,

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(1994) suggested that there are no significant differences between the two conditions, in terms of their effectiveness, productivity, idea quality and decision quality. Similarly, throughout their study, Weisband and Atwater (1999) examined the quality and the amount of contributions between face to face and CMC groups. Their findings revealed that they were no differences related to the amount of the actual contributions. The results also supported that CMC groups can be assisted by the absence of interpersonal interaction since the employees rely more on the real performance of others in order to evaluate their work and to make the best decision. On the contrary, face to face groups are commonly biased, since they are influenced by their personal relationships and by feelings of liking. Situations like that can be kept away from interactions that are mediated by computers, since the absence of cues mitigates the differences between the interactants and incites the equal participation, releasing the co-workers from stereotypes. Additionally, Barkhi (2005) throughout his study attempted a comparison between face to face groups and CMC groups, in order to comprehend if there are differences between the two conditions in terms of task performance, deviation from coalition and the truthfulness of the information that was exchanged. The results indicated no important differences between the two conditions. Moreover, in contrast to what was expected, he mentioned that CMC groups were found to be more efficient in "out of line" thinking tasks as opposed to face to face groups.

It has been already mentioned that the task-related nature of CMC in general and more specifically of emails may prompt the employees to be focused on their topic without being distracted from their work. By extension, in another paper, the perceived richness of email, as a communication medium for organizational proposes, and its influence in task performance was examined (Baninajarian, Abdullah and Bolong, 2011). The authors, who conceptualized task performance in terms of decision quality, decision time, consensus and communication satisfaction, found out that the use of email did not affect the quality of performance in a negative way. It is important to mention that 47.7 % of the participants reported that using email led to a higher score on task performance. So, the authors rejected the idea that CMC is not a suitable medium for organizational communication since their findings are not compatible with the idea that Computer-Mediated Communication affects negatively the performance of a task. The use of emails in working context has been also examined by Ku (1996), who aimed at comprehending if the use of emails, and mainly the amount of use of emails can have an influence on the effectiveness of decision making, the quality of the work, the quality of the

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decision making and last but not least the participation of the co-workers. Their results suggested that the quality of the work and the adequacy of decision, including all the other dependent variables, had been positively influenced by the use of emails.

An advantage for face to face groups, compared to CMC groups was found in Sarrina's Li (2007) study that analyzed the effect of communication mode in group outcomes. According to the results, the performance of face to face groups was significantly better compared to Computer Mediated groups in terms of problem analysis and criteria establishment. Thereafter, it is worthy to mention that there were no significant differences concerning the objective outcomes of the group. Taking into account the above, it could be said that face to face communication can affect in a positive way the collaboration between the co-workers; however, it is not a crucial factor that can have a great influence on the final outcome of their work.

Quality and accuracy of communication

Baninjarian, Abdullah and Bolong (2011) have defined communication as an important element of task performance and their findings demonstrated that CMC is not disadvantageous for communication effectiveness and satisfaction, despite the fact that it is certainly a task- related medium and consequently personal interactions are not reinforced. By the same token, it was found that participants who communicated via email were more overconfident concerning their effectiveness to convey a message, and overconfidence may lead to misunderstandings and may undermine the quality of the communication (Kruger, Parker, Epley and Ng, 2005). In another study, coherence, explicit references and task orientation, were found to be also lower among CMC group members, which can be also disadvantageous for the quality of communication (Cornelius and Boos, 2003). Their findings are consistent with the above idea since comparing the three conditions (email, voice only, face to face) ,both friends and strangers were less accurate in communicating adequately a specific message, tone or an emotion to another participant in the email condition (Kruger, Parker, Epley and Ng, 2005). Sarrina Li (2007) has also tested the impact of communication channel, comparing face to face interaction with computer-mediated interaction, in the quality of communication and subsequently in the outcomes of the group. She found that even if face to face groups can communicate more efficiently and adequately this does not have an influence on the quality of their performance. That is face to face groups communicated better, in terms of problem analysis and criteria

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establishment, with each other. Although their communication performance was better, this did not affect the final objective outcomes, since face to face groups did not achieve better outcomes. Moreover, DeSanctis and Monge (1998) have recommended that communication volume and efficiency is lower for CMC groups since the lack of non-verbal cues prevent the co-workers from managing the feedback and from comprehending easily the great amount of the information that they receive. Finally, Barkhi's (2005) study, focusing on the differences that exist between the two conditions that we are interested in, tested the truthfulness of information exchanged and it was released that there are no significant differences between face to face and Computer-Mediated Communication.

The purpose of the above part was to examine if the communication channel affects the quality of communication and task performance, based on eleven published studies. To summarize the most important findings; primarily, face to face groups were found to communicate better and more efficiently compared to CMC Groups. The reasoning behind this idea is first of all the immediacy and directness of the feedback that characterize face to face interaction, as well as the amount of verbal and non- verbal cues that are available. Both of them enhance the quality of communication and improve the mutual understanding. This, in turn, has an influence on the time needed to complete their task, since the more successful is the communication; the less time is needed to fulfill the work. That is, face to face groups need less time in order to accomplish their work. Additionally, as far as the satisfaction with the group process and group outcomes are concerned, face to face groups have the advantage. However, for CMC groups, the quality of performance, of decision- making and their productivity has not been proved to be lower since no significant differences were found between the two conditions.

Moreover, except for the communication channel another important factor that is going to be examined in the present study, in order to answer the second research question, is the level of familiarity and how it is associated with the quality of communication and task performance. In order to come to a conclusion 25 studies that tested the differences between friends, acquaintances and strangers were examined and they are presented in the table below in a chronological order.

Summary of familiarity studies with a comparison between friends, acquaintances and strangers

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Study	Sample	Independent Variable	Dependent Variable	Findings	Advantage for friends	Final outcome
Morgan &Sawyer, 1967	56 fifth- and sixth-grade boys	Kind of relationship (Friends vs. non-friends)	-Group outcomes	Non-friends were more likely to find mutually profitable solutions than friends pairs	-	-
Fry, Firestone&Williams, 1983	74 dating couples and 32 mixed-sex stranger dyads	Kind of relationship (dating couples vs. strangers)	-Dyadic profit in a negotiation task	Dating couples exchanged more truthful information. However, the dyadic profit in the task was higher for strangers. Stranger dyads also found solutions which were characterized by higher quality compared with those of dating couples.	-	-
Funder &Colvin, 1988	164 male and female under graduates	Degree of familiarity (close acquaintances vs. strangers)	-Interjudge agreement in personality ratings	Close friends resulted in better and more accurate judgments compared to	+	+

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strangers. According to the authors, a possible explanation could be their mutual knowledge which enhanced the effectiveness of their communication.

| Fussel& Krauss, 1989 | 17 pairs of under graduates | Level of familiarity | -Identification performance of messages

Interpretability of referents of three sets of messages | The differences concerning the identification performance between the three conditions were significant. However, they were small. In terms of interpretability, friends' performance was better. Generally, participants were more accurate with friends' messages and especially as far as figurative messages are concerned. | 0 | +

+ |

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Goodm an&Ley den, 1991	26 crews of two mines	Familiarity	-Group productivity	Group familiarity can affect group productivity in a positive way. That is, lower levels of familiarity are associated with lower productivity.	+	+
Wagner &Smith , 1991	28 female students of the University of Manchester	Kind of relationship (friends vs. strangers)	-Identification of emotion -expressivenes s	The differences between the two conditions were significant with friends identifying better than strangers the right emotion. Continuously, expressiveness was higher in the presence of friends compared to a stranger.	+ +	+
Winstea d, Derlega , Lewis, Sanchez - Hucles & Clarke,	90 male and 98 female undergraduat e students from Old Dominion University	Kind of relationship (friends vs. strangers)	-Effective coping	No significant differences were found between the two conditions, concerning the effective coping of a stressful situation. The findings revealed	0	0

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1992				that there were no significant differences between interacting with a friend rather than a stranger in reducing negative affect or reducing confidence during the improvised speech. However, friends reported to provide more social support	
Corman &Bradford, 1993	57 undergraduate students in a basic organizational communication class at a large southwestern University	Perceived connectedness with the group, communication load	- Omissionandc ommissionerr ors	A positive relationship was found between perceived connectedness and commission errors. Additionally, a positive relationship was found between load and omission errors. That is, a strong perceived relationship can increase both the number and the	- -

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				magnitude of errors since it enhances people's tendency to overestimate the effectiveness of their communication.		
Shah&Jehn, 1993	SixtyMidwesternbusinessstudents	Kind of relationship (friends vs. acquaintances)	-Group performance -decision-making tasks -motor tasks -group conflict -task outcome	Task performance was higher for groups of friends. Groups of friends performed significantly better both on decision-making tasks and motor tasks, compared to groups of acquaintances. Friends groups experienced also more task –related conflicts and asked more relevant questions. They engaged in more planning and cooperative behavior. All the above resulted in	+ + + + +	+

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				better task outcomes.		
Gruenfeld, Mannix, Williams&Neale, 1996	213 executive students at two Midwestern business schools	Level of familiarity (familiar, mixed, stranger condition)	-Satisfaction with the outcome of the group task -group decision quality	Between the familiar and stranger condition, in terms of group's satisfaction with the outcome of the task, strangers groups were less satisfied. Groups of strangers discovered the correct solution more often than familiar groups	+ -	-
DePaulo, Charlton, Cooper, Lindsay &Muhlenbruck, 1997	16 studies reported correlations between the confidence measure and a measure of accuracy at detecting deception	Closeness of relationship	- Confidence in judgments - truth bias - accuracy of judgments, at detecting deception	Closeness of relationship increases the confidence in judgments. Truthbiaswaslarger forfriendsratherthanstrangers.	+ - 0	0
Jehn&Shah, 1997	159 business students	Kind of relationship (friends vs. acquaintances)	-Positive communication - planning -critical	For all the dependent variables, it was found an advantage for the	+ + +	+

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			evaluation	friends' condition compared to the acquaintances' condition. Friends exchanged more positive communication, they cooperated more and they revealed higher level of commitment. Consequently, groups of friends performed better than acquaintances groups.	+	
			-commitment		+	
			-cooperation		+	
			-task performance			
Keysar, Barr, Balin& Paek, 1998	48 nativeEnglishspeakers	Commonground (mutual knowledge)	Comprehension of definite references	Common ground (mutual knowledge) does not play an important role in comprehension process. According to the authors, the role of common ground is necessary only when correction is needed and not during the initial	0	0

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				search for definite references.		
Park, Levine, McCorn ack, Morriso n & Ferrara, 2002	202 undergraduat e students	Closeness of relationship	-Deception detection (discovery methods of lies)	The kind of discovery was not affected by the closeness of relationship. However, as far as the relationship between the liar and the respondent is concerned it is worthy to mention that 39.5 % were friends compared with 4.6 % who were acquaintances, providing evidence that communication between friends is not necessarily better since more untruthful information was exchanged.	0	0
Knoblo ch, Solomo n&Thei	120 heterosexual dyads (dating partners) at a	Intimacy (related to the length of time the participants	-Explicitness of relationship talk	Intimacy was positively associated with the explicitness of	+ 0	0

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ss, 2006	Midwestern university	had been interested in their partners, from 1 week to 6 years)	-depth of relationship talk -people's judgment of the realism and the ease of the conversation	relationship talk but not with the depth of relationship talk. Intimacy was not also a significant predictor of people's judgment of the realism as well as the ease of the communication between the interactants.	0	
Theiss &Solomon, 2006	215 undergraduate students	Intimacy	-Directedness of communication about relationship difficulties (about irritations)	The time that the participants knew each other varied from 0 to 93 months while they characterized the status of their relationship as acquaintances, friends or partners. The findings suggested that higher levels of intimacy contributed to the directedness of communication about irritations.	0	0

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				However, intimacy was not a crucial predictor of communicative directedness.		
Rains, 2007	82 members of an undergraduate course in small group communication	Anonymity (Anonymous. identified)	-Group effectiveness -satisfaction -communicator credibility	The degree of anonymity (anonymous or identified) did affect neither the group effectiveness nor the satisfaction with the group outcomes. However, according to the results, anonymity may have a negative influence on source's credibility.	0 0 +	0
Wu& Keysar, 2007	40 pairs of University of Chicago native English-speaking undergraduates	Knowledge overlap and type (shared, privileged, new)	Communication effectiveness	Sharing more information can enhance egocentric tendencies and by extension reduce the effectiveness of communication	-	-
Byron, 2008	Literature on communicati	Lengthoftherelationship	-Accuracy of emotional	The literature proposed that the	0	0

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on, emotions and perceptions		communication (accurate perception of emails)	more people know each other, the more accurate the communication of emotions will be. So, shorter relationships can perceive emails as more negative than they actually are, named as the negativity Effect. However, the negativity effect has both positive and negative consequences. It enhances the motivation for information seeking but on the other hand, it augments the anxiety and creates conflicts between the co-workers.		
Cho&Lee, 2008	86 students from three distant universities	Preexistinginterpersonalsocial networks	-Information-sharing network	Preexisting interpersonal social networks significantly constrained the	-	-

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				process of collaborative information seeking since individuals tend to select information from people that already know, neglecting other choices that may be better. In that cases, the information redundancy problems are sometimes inevitable		
Hope, Ost, Gabbert, Healey &Lenton 2008	96 participants	Nature of relationship (couples, friends, strangers)	-Co-witness accuracy	Co-witness accuracy is modified by the nature of the relationship with friends and couples more prone to accept misinformation	-	-
Park, 2008	236 undergraduates in a large Midwestern University in	Team cognition (Shared vs. unshared)	-Satisfaction with the process -task performance	Groups with a shared understanding of communication rules were found	+ 0	0

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	the United States			more satisfied with the process. However, no differences were found between the two conditions, as far as the task performance is concerned.	
Schober & Carstensen,2009	96 married college graduate adults	Familiarity (married couples vs. strangers)	-accuracy at a matching task -confidence of understanding -efficiency of communication -entertainment	No effect found between the two conditions	0 + 0 0
Yuan, Fulk, Monge &Contractor, 2009	218 people in 18 organizational teams from 5 industries	Communicationtiestrength	-Individualexpertiseexchange	Communication tie strength was positively related to individual expertise exchange. It was found that individual expertise exchange happened more frequently in teams with higher team	+ +

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				communication ties strength.		
Savitsky, Keysar, Epley, Carter & Swanson,2011	144 undergraduate students of the University of Chicago, 60 Williams College students	Level of familiarity (Friends vs. strangers)	-Egocentrism -Self-report of the quality of communication	Egocentrism emerge more often with a friend than with a stranger, Friends overestimate the success that they convey messages to others. Friends did not communicate better than strangers	- - -	-

Member familiarity and task performance

Based on twenty eight published studies that examine the effect of member familiarity in the quality of communication and task performance, it could be said that on a large scale there are no significant differences between people who know well each other and strangers or people who are not so familiar. More peculiarly, ten out of twenty eight papers supported that there are no significant differences between the two conditions, in order to characterize one of them as more beneficial (Schober and Carstensen, 2009; DePaulo, Charlton, Cooper, Lindsay and Muhlenbruck, 1997; Park, Levine, McCornack, Morrison and Ferrara, 2002; Keysar, Barr, Balin and Paek, 1998; Park, 2008; Rains, 2007; Knobloch, Solomon and Theiss, 2006; Winstead, Derlega, Lewis, Sanchez-Hucles and Clarke, 1992; Theiss and Solomon, 2006; Byron, 2008). Additionally seven studies reported a benefit for people who know each other (friends, romantic partners, acquaintances etc.) (Goodman and Leyden, 1991; Yuan, Fulk, Monge and Contractor, 2009; Funder and Colvin, 1988; Fussel and Krauss, 1989; Wagner and Smith, 1991; Shah and Jehn, 1993; Jehn and Shah, 1997). However the most interesting finding is that ten studies reported an advantage for strangers as opposed to friends (Hope, Ost, Gabbert, Healey and Lenton, 2008; Fry, Firestone and Williams, 1983; Adams, Roch and Ayman, 2005; Morgan,

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Sawyer, 1967; Gruenfeld, Mannix , Williams and Neale, 1996; Corman and Bradford, 1993; Wu and Keysar, 2007; Cornelius and Boos, 2003, Cho and Lee, 2008; Savitsky, Keysar, Epley, Carter & Swanson,2011).This confirmed our first claim, that the degree of familiarity does not play an important role in both the quality of communication and in the quality of task performance and productivity. Finally, taking into consideration that ten out of twenty eight articles reported that there are no differences between the two conditions, in combination with the fact that ten out of twenty eight studies revealed an advantage for strangers as opposed to friends, we could conclude at least that the quality of communication and the task performance is not superior among people who know each other and who structure their interaction based on their common ground. That is, neither familiarity nor common beliefs and shared knowledge seems to affect significantly the effectiveness of communication and by extension the task performance, which is highly connected with the success of communication.

Group Satisfaction with the process and time to complete the task

In general, the results support that group constituted of people who know each other are usually more satisfied with the working process, the outcomes of the task and the communication mode compared to groups that are mainly constituted of strangers. The findings of a study conducted by Gruenfeld, Mannix, Williams and Neale (1996) revealed that in terms of satisfaction with the outcome of the task, groups of familiar people were found to be significantly more satisfied. Furthermore, when Park (2008) investigated the effect of team cognition (shared against unshared) in task performance and satisfaction with the process, he found out that groups with a shared understanding of communication rules used to be also more satisfied with the whole process in general. In the first place, his independent variable (team cognition) may seem irrelevant to the present study. However, if we take into account that common ground is a fundamental concept that characterizes close relationships and that common ground has been already defined in the introduction as the shared beliefs, experiences and knowledge that people have in common, then we could say that a shared understanding reflects the concept of common ground. So, it can function as an alternative variable instead of the main one; friends versus strangers. Thereafter, the rest of the studies that tested if there is a relationship between the degree of familiarity and the satisfaction of the process, indicated that familiarity is not a crucial indicator that can predict satisfaction. To be more specific, there are three studies that found that

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familiarity is not accountable for satisfaction with the group processes and outcomes (Adams, Roch and Ayman, 2005; Rains, 2007; Schober and Carstensen, 2009). Finally, according to Cornelius and Boos (2003), there is not a significant correlation between the degree of familiarity and the satisfaction of the group process. Occasioned by the above results, and despite the fact that groups of friends usually tend to be more satisfied, it can be said that there is no a consequential relationship between the level of familiarity and the satisfaction with the group process.

Continuously, Adams, Roch and Ayman (2005) conducted a study in order to investigate the interaction between the communication medium (face to face - CMC) and member familiarity (friends – strangers) and their influence on decision time. For CMC groups, a negative relationship was found between the level of familiarity and the time needed to accomplish the task. That is, high levels of familiarity decrease the decision time; but this holds true only for CM groups. Thereafter, it should be mentioned that only one study shed light on the effect of familiarity in terms of the time of decision making. So, it cannot be considered as an adequate element in order to come to a more general conclusion.

Quality of communication; accuracy and degree of understanding

Throughout their study, Schober and Carstensen (2009) investigated the accuracy and the efficiency of communication between married couples and strangers and they concluded that the differences between the two conditions are not significant. To be more specific, they investigated the accuracy of participants at a matching task, the confidence of their understanding and finally the efficiency of their communication. The results showed that married couples were not more accurate than strangers. Concurrently, strangers did not perform worse than the couples in terms of their communication performance. However, the married couples were more confident, as far as their ability to comprehend and to convey a message is concerned. So, the authors concluded that long-term relationship and by extension familiarity, do not necessarily contribute to the effectiveness of communication. Additionally, egocentric tendencies have been found to emerge more often among friends rather than strangers. Egocentrism prevents people from realizing that the other interactant may conceptualize the "reality" through a different perspective that is why they overestimate their ability to convey a message efficiently. Consequently, misunderstandings and miscommunications are sometimes inevitable. In accordance with the above, friends often do

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not communicate better than strangers (Savitsky, Keysar, Epley, Carter and Swanson, 2011). That is consistent with the results of Keysar, Barr, Balin and Paek (1998) who determined that common ground does not have an influence on the comprehension process. In more detail, the authors proposed that people did not rely on common ground in order to interpret the meaning of a message. The role of common ground is corrective. That is, in case of misunderstandings, people take advantage of their common knowledge in order to be capable of interpreting the message adequately. Additionally, familiarity can enhance the confidence in judgments which may induce the wrong results and lead to misunderstandings. Characteristically, in a study conducted by DePaulo, Charlton, Cooper, Lindsay and Muhlenbruck (1997) the judges' accuracy at detecting deception together with the level of confidence in judgments was examined. The results indicated that the closer the relationship was, the more confident the people felt in their judgments, interfering with the accuracy of communication. Simultaneously, truth bias, meaning people's tendency to perceive a message as truth, even if it is not, emerged more often among friends, or dating couples compared to strangers. Truth biases, resulting from the overconfidence that exists among familiar people, also affect negatively the communication performance. Analogously, Cornelius and Boos (2003) have confirmed that high levels of familiarity among people do not significantly influence the comprehension processes and mutual understanding. Throughout their study, they tested the effect of communication channel and member familiarity in the cohesion of communication and mutual understanding. The participants were separated into three subgroups; the identifiable condition constituted of people who knew each other, the familiar condition, where the members knew each other for a long time and the friends' condition. The findings pointed out that familiarity enhanced both coherence and mutual understanding. However, the effect of member familiarity was quite small and consequently it cannot be considered as a crucial factor that influences the quality of communication.

Finally, another important finding related to the degree of familiarity and its effect on the quality of communication revealed that when people share a lot of information egocentric tendencies emerge and the quality as well as the effectiveness of communication is subverted (Wu and Keysar, 2007), suggesting that friends do not always communicate better than strangers.

On the other hand, there is evidence that the more and the better people know each other, the more accurate the perception of the content of a message will be. Characteristically, Byron

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(2008) examined the factors that provoke the inaccurate perceptions of emails in organizational environment in order to understand to what extent people conceptualize a message accordingly to its original sense. People usually are based on their knowledge about their interactant in order to evaluate the meaning of a message. So, people with a closer relationship or with a longer email history may be more accurate in their perceptions and less likely to experience the negativity effect, meaning to conceptualize a message in a more negative tone compared to its actual tone. However, it should be added that the negativity effect has also a positive consequence since it enhances the information seeking, promoting the quality of communication. Continuously, Knobloch, Solomon and Theiss (2006) explored the role of intimacy in the explicitness and the depth of the relationship talk. A positive relationship was found between intimacy and the explicitness of relationship but not between intimacy and the depth of relationship talk .In addition, the above results were not statistically significant. Consequently, the findings do not establish intimacy as a crucial variable that influences the effectiveness of communication. Another interesting finding that has to be taken into account is that a positive relationship has been confirmed between the perceived connectedness of people and both the amount and the magnitude of errors that they commit during the discussion process. The reasoning behind those findings is that increasing perceived connectedness incite people to overvalue the effectiveness of their communication and consequently, errors and misunderstandings are unavoidable (Corman and Bradford, 1993).

Finally, two studies have claimed that friends communicate better, Fussel and Krauss (1989), tested the level of familiarity and its influence on identification performance and interpretability. To be more precise, they conducted an experiment according to which the participants had to identify the referents of three different messages. The results revealed that people were more accurate when they were confronted with their friends' messages rather than with strangers' messages. Their findings confirmed that common ground promotes the mutual understanding and contribute to the communication process. Besides, throughout a study proceeded by Jehn and Shah (1997) it was suggested that groups constituted of friends communicate much more compared to groups of strangers and by extension, this has an influence on the quality of their performance, with friends' task performance being essentially better than groups of acquaintances.

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To come to an end, in terms of the quality and efficiency of communication, the majority of studies concluded that familiarity is not a significant variable that can predict communication effectiveness. In accordance with the literature review two are the most important components that undermine the quality of communication between people who are familiar with each other; initially, egocentric tendencies emerge mainly between familiar people. That is, people are not capable of realizing that their counterpart may comprehend the reality through a different perspective and secondly they overestimate their effectiveness to convey a message successfully. Both of those conditions results in misunderstandings and miscommunications. On the other hand, it has been found that common ground and shared knowledge, which are lacking among strangers, are really important for the adequacy of communication, predicting that familiar people communicate better than strangers or less familiar. The results are contradictory and probably more research is needed in order to comprehend better the role of intimacy and its influence on the quality of communication.

Task performance; group effectiveness, outcomes, decision making and productivity

In general, 10 studies that examined the level of familiarity in terms of task performance were used in order to understand if familiarity constitutes an important variable that contributes to the success of a group. Two out of ten published studies reported no significant differences between the two conditions (friends vs. strangers); (Park, 2008; Rains, 2007). Additionally, four studies revealed an advantage for friends (Goodman and Leyden, 1991; Funder and Colvin, 1988; Shah and Jehn, 1993; Jehn and Shah, 1997), while four studies revealed an advantage for strangers (Adams, Roch, Ayman, 2005; Fry, Firestone and Williams, 1983; Morgan and Sawyer, 1967; Gruenfeld, Mannix, Williams and Neale, 1996). In the following paragraph, the findings of each paper are going to be discussed in more details.

Park (2008) inquired into the relationship between team cognition (shared or unshared) and task performance and he ascertained that there are no significant differences between the two conditions. Similarly, Rains (2007) tested if anonymity affects the effectiveness of a group, making a distinction between anonymous and identified groups and he found out that there are no important differences between the two situations in order to have an influence on the quality of group's work.

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In addition, as it has been already mentioned, four studies reported a benefit for friends, as far as the performance of the task is concerned. A case in point is a study conducted by Goodman and Leyden (1991) which aimed at testing if there was a correlation between the level of familiarity and group productivity. The researchers compared the final output of two groups; familiar and less familiar and their results suggested that there is a positive relationship between group familiarity and group productivity; since the familiar group achieved better outcomes. In accordance with the results of Goodman and Leyden (1991), Funder and Colvin (1988) found that participants who already knew their targets performed essentially much better, in terms of interjudge agreements in personality ratings. Friends agreed more and realized more accurate judgments. A possible explanation is that more information was available to friends due to the fact that they have developed common ground and consequently they are based on their shared knowledge and the mutual understanding in order to lead the discussion and to perceive the information that they receive. Conclusively, two studies (Shah and Jehn, 1993; Jehn and Shah, 1997), attempted to comprehend if the nature of relationship (friends vs. acquaintances) is related to task performance, including the outcomes of the group and the effectiveness of decision-making. In both of the studies above, groups of friends were found to perform significantly better compared to group of strangers. In other words, group of friends communicated much more, they asked more task- related questions and they cooperated better which in turn resulted in better task performance concerning both decision- making task and motor task (Shah and Jehn, 1993).

On the other hand, we are confronted with four studies that discovered a negative relationship between familiarity and efficient task performance. For example, Fry, Firestone and Williams (1983) compared dating couples with strangers in order to evaluate their performance in a negotiation task. Their findings indicated that even if dating couples exchanged more truthful information, stranger dyads' performance was totally better and they also reached higher quality decisions. Moreover, for CMC groups, a negative relationship was found between member familiarity and group productivity, since high levels of familiarity results in less accurate decisions (Adams, Roch, Ayman, 2005). Similarly, in another study, it was found that non-friends were looking for mutually profitable solutions more often than friends and that might lead to better outcomes (Morgan and Sawyer, 1967). Last but not least, Gruenfeld, Mannix, Williams and Neale, (1996) tested if the level of familiarity can affect the quality of decision

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making and their findings proposed that strangers found the appropriate solution more often than friends.

Taking the above findings into consideration, it could be proposed that in a large scale, the differences between the two conditions are not consequential. Friends do not necessarily perform better than strangers and the fact that six out of ten studies did not report an advantage for friends provides support to the above statement. That is, familiarity does not always predict better outcomes neither contributes to the quality of performance and decision making.

At the final point, the present study was based on thirty six published studies which aimed at examining if the communication channel or the degree of familiarity could affect the effectiveness of task performance, as well as the quality of communication in order to answer our research questions. More specifically the target was to find out if there are differences between people who communicate face to face and Computer Mediated Communication (Research Question 1), and thereafter, it was investigated if acquaintances or familiar people communicate more efficiently and performed better compared to strangers (Research Question 2). The literature showed that the differences between the two conditions are not consequential; neither between face to face and CMC conditions, nor between friends, or generally people who know each other, and stranger conditions. Different indicators which set up the two dependent variables, the quality of communication and the effectiveness of task performance, are affected in a different way, positive or negative by the communication channel and the level of familiarity. However, broadly speaking, it could be said that both the communication mode and intimacy are not two fundamental indicators that predict higher quality of communication and better task performance and group outcomes.

DISCUSSION AND CONCLUSION

This study aimed at investigating whether the communication channel, focusing on Computer Mediated Communication compared to face to face communication, and the degree of familiarity between the interactants, has an influence on the quality of communication as well as on task performance. The primary reason that motivated the present research based on the idea of distant work. That is, as it has been already mentioned, nowadays, the globalization of modern society in combination with the rapid growth of new technologies have promoted a new kind of work,

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known as distant work, telework or telecommuting. The above terms refer to people who are geographically distributed but they are still working on the same project. The communication between distant workers is mainly mediated by Information and Communication Technologies (ICTs). Additionally, the distributed co- workers usually do not know each other; there is a lack of familiarity, co- presence and common ground. The purpose of the present paper was to examine the above variables, meaning the communication medium and the level of familiarity within working environment, in order to comprehend if they are related to the quality of communication and to the task outcomes, and if so, how. In order to answer the research questions, 36 published studies were used and analyzed. Finally, a number of important conclusions can be drawn from our analysis.

First, the current study discussed the effect of communication channel in satisfaction with the group process and the group outcomes, the time needed to complete the task, the quality and the accuracy of communication and last but not least, the task performance, including indicators such as the effectiveness of the group, the quality of new ideas and the final objective group outcomes. Our findings indicated that face to face groups are usually more satisfied both with the working process as well as with the group outcomes, as opposed to CMC groups. Furthermore, face to face groups needs less time to accomplish their work. The immediate feedback and the greater amount of cues that are available function in benefit of face to face interaction. On the contrary, the limited number of cues in CMC condition, and especially in text- based CMC extend the time needed to manage the information that workers receive, and consequently they need more time to execute their work. In addition, for CMC groups, the lack of non- verbal cues in combination with the absence of immediate and direct feedback result in lower communication performance (De Sanctis and Monge, 1998). So, in terms of communication accuracy and quality, the majority of the studies come up with the conclusion that face to face groups communicate better compared to CMC groups.

The quality of communication and the satisfaction with the working process are highly connected with the effectiveness of task performance; to this extent, it was expected that face to face groups would achieve higher results regarding the task performance. However, the literature review showed that the communication channel does not affect the objective outcomes since the differences between the two conditions were not of great importance. Taking everything into

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account it could be said that face to face interaction is richer, it enhances the quality of communication and finally it contributes to people's satisfaction with the communicative processes and outcomes. Thereafter, within working environment, where the aim is to fulfill the work, the task- related and sometimes impersonal nature of CMC benefit the co-workers, who focus on their work, establishing Computer-Mediated Communication as an appropriate medium for organizational communication.

In conjunction with the communication channel, the present research investigated also the effect of familiarity in the adequacy of communication and task performance, testing the differences between groups of friends or acquaintances and groups constituted of strangers. The findings in this part are really interesting. The concept of common ground (Clark, 1996) suggests that familiarity plays a very important role in communication efficiency; in other words, the more the people know each other, the better they communicate since they rely on their mutual experiences and their shared knowledge in order to interpret a message. Nevertheless, the majority of the studies revealed no differences between the two conditions while ten studies reported an advantage for strangers as opposed to seven papers that reported an advantage for familiar people. Egocentrism (see Kruger, Parker Epley and Ng, 2005; Wu and Keysar, 2007) and acquaintances' overconfidence about their success to convey a message are the two main reasons that hinder the communication performance between familiar people (DePaulo, Charlton, Cooper, Lindsay and Muhlenbruck, 1997). More precisely, familiarity was not found to predict satisfaction with the group processes and outcomes. Furthermore, a negative relationship was found between the degree of familiarity and the time needed to accomplish a task (Adams, Roch and Ayman, 2005). However, it should be mentioned again that only one study used the time as a dependent variable and consequently the results cannot be generalized.

Finally, with regard to task performance and group objective outcomes, two studies reported no differences between the two conditions. At the same time, in four studies was found a benefit for familiar people whilst the last four studies indicated that strangers performed better in task performance, decision making and they also achieved better outcomes. Based on the above findings we can assume that familiarity does not predict better group outcomes and contributes to group productivity since friends did not necessarily perform better than strangers.

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The next question that occurs is which of the two factors is finally more important, the medium or the level of familiarity? The corpus of studies and mainly three studies (Cornelius and Boos, 2003;Adams, Roch and Ayman, 2005; Kruger, Parker, Epley and Ng, 2005) that examined the interaction between the medium and member familiarity showed that the medium and not familiarity predicts satisfaction with the group process and contributes to the quality of communication. However, none of the independent variables can be considered as an important agent for better task performance.

The findings of our study showed that distant working groups can be as much effective as face to face groups, but in general face to face interaction was proved richer. The results were mainly emphasized on the absence of non- verbal cues and the lack of feedback which were found to mitigate the communication performance. However, the majority of the studies were not recently published and they referred to text-based CMC. Nowadays, Computer Mediated Communication changes constantly. That is, distant workers can make the most of the new properties of communication technologies, such as Videoconferencing or Video calling, like Skype. In those cases CMC can be comparable to face to face interaction, giving the opportunity to distributed workers to collaborate efficiently. Apart from the medium, teleworkers usually do not know each other. But the results showed that the level of familiarity does not affect the quality of performance and decision making. So, the absence of personal interaction and relationship can be beneficial for them, since they focus only on the piece of work that has to be done. Finally, the construction of the Boeing 777 suggests that distant working group can be really effective. Nevertheless problems and difficulties are inevitable, as it happened with the construction of the Boeing 787, which probably are going to be surpassed with the establishment of teleworking in the global working environment, considering that in the close future people will be even more familiar with technology as well as with this new working mentality of distant work.

Limitations and Strengths

One limitation of the present study is that the analysis of the results did not rely on a quantitative and consequently objective measurement since a narrative meta-analysis was used. A narrative review examines past findings verbally or conceptually (e.g. Orlitzky, Schmidt and Rynes, 2003, p. 410), looking for patterns or factors linked with one or another outcome, without involving statistics (Slavin, 1995). Narrative review is more subjective in nature and sometimes may lead

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to misleading conclusions. However, in the present study, it was not possible to apply a systematic method since the outcome measure was not similar and consistent in all the studies collected.

A second limitation is related to the publication bias which is also famous as the "file-drawer" problem (Slavin, 1995). That is, studies that fail to fulfill the expected results are less likely to be published, calling the validity of the findings into question. So, taking into account that the corpus of the studies used for the analysis was constituted only of published scientific papers, the publication bias was inevitable. Except for the publication bias, another limitation of narrative reviews in general, and by extension of the present paper is also the reviewer bias. In other words, the author sometimes cannot avoid incorporating certain papers that foster the results that he expected to find out (Slavin, 2005).

However, the narrative review can be also a very useful tool for a researcher. The main advantage of a narrative review is that it can examine at the same time different subjects within a given topic (Collins and Fauser, 2005). Narrative review can also suggest explanations for different findings, derived from different studies, by looking for patterns and connections. That is, it compares different findings and reveals new conclusions that no individual study could have suggested and confirmed (Slavin, 2005).

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