Help-Seeking Behaviour in Computer-Mediated Communication

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Often when an individual decides to seek help, several communication media are available to him or her (e.g., email, phone, in-person), which means the help-seeker faces a media selection decision. To make this decision, a help-seeker may consider factors such as the convenience of, and his or her degree of comfort with, a given medium. He or she may also consider the effectiveness of each medium. In a series of five studies, I examine whether help-seekers are able to accurately assess the effectiveness of various communication media—specifically, requests made over email versus in-person. I find that egocentric biases distort the ability of help-seekers to accurately assess the effectiveness of email, which may lead them to choose less effective means of seeking help.

In Study 1, I find that a substantial percentage of help-seekers prefer email to face-to-face (FtF) communication when seeking help, due to the convenience email offers. In Studies 2 and 3, I find that helpers are far more willing to help when they are asked FtF than when they are asked via email; however, help-seekers predict the same level of compliance for the two media. Together, these two findings—greater convenience combined with inaccurate estimates of media effectiveness—may lead help-seekers to choose suboptimal media for making requests.

My findings for email requests are in contrast to numerous studies that have shown that people tend to *underestimate* the likelihood that others will comply with their direct requests. In Study 4, I explore the mechanism by which this highly robust FtF phenomenon is reversed in email communication. I find that help-seekers fail to recognize the extent to which feelings of trust and empathy, which drive helpers to help in face-to-face interactions, are lost through the use of email as the medium of communication. Help-seekers in this study mistakenly predict that helpers will experience the same levels of trust and empathy for email and FtF requests.

In Study 5, I examine the effect of ongoing relationships on predictions of media effectiveness. Surprisingly, a similar pattern was observed for friends and strangers; FtF requests are more effective than email requests for seeking help, even among friends, and requesters often fail to acknowledge this difference.

I conclude by discussing the theoretical and practical implications of these findings. A key takeaway is that people may easily be tempted to choose suboptimal media to seek help, leading to less help being granted overall.

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A very heartfelt and sincere thank you goes out to my beloved wife, Mahdiyeh Entezarkheir, who has stood by my side throughout this long and difficult journey and continues to be my partner and champion.

Dedication

I dedicate this thesis to my beloved father, Ali-Asghar Roghanizad, who has been my lifelong mentor; his blessing and support paved the way for my academic life.

Table of Contents

List of Figures

List of Tables

Ch. 1 – Introduction

It is well known that the digital revolution has profoundly changed the usual modes of communication. The possibilities offered by computers and by digitization have in fact made communication simpler, faster, more economically accessible, and have increased the number of potentially reachable interlocutors.

With the pervasiveness of Computer-Mediated Communication (CMC), one of the themes that the literature has examined concerns the formal differences between traditional face-to-face communication (FtFC) and communication via computer, e.g., the impact that the use of CMC versus FtFC has on social influence and persuasion.

Research suggests that CMC is a poor medium for influencing others (Wilson, 2002). In interpersonal studies, CMC has proven inferior to FtFC in a number of important ways. For example, the use of CMC produces lower-quality negotiation outcomes (Hollingshead, McGrath, & O'Connor, 1993) and efficiency (Mennecke, Valacich, & Wheeler, 2000), lowers groups' productivity (Arunachalam & Dilla, 1992; Hollingshead et al., 1993; Straus & McGrath, 1994), and lowers members' satisfaction with the communication medium (Straus & McGrath, 1994).

Despite cautionary research findings, CMC is fast becoming the dominant means of interaction between groups and individuals (Dimmick, Kline, & Stafford, 2000; Marold & Larsen, 1999; Whittaker & Sidner, 1997). In numerous cases, these new media—such as email—are employed to persuade others.

Findings from studies conducted in FtF domains have proven difficult to generalize to the CMC domain (Wilson, 2002). It is clear that CMC affects key characteristics of interpersonal persuasion, such as the communication of nonverbal cues (McGrath & Hollingshead, 1993), and

differences between CMC and FtFC have been shown to affect outcomes in studies on related topics. These findings suggest that the process of interpersonal persuasion deserves additional study specific to the CMC domain. This is the purpose of my research. In particular, I plan to shed light on the message senders' as well as the receivers' perceptions of the effectiveness of CMC vs. FtFC as interaction media.

One form of persuasive message is a help request (i.e. seeking help through email or FtFC). Help-seeking, as opposed to many other persuasive messages (e.g., quitting smoking, eating healthy foods, voting for someone, etc.), has little to do with making a convincing argument; instead, it relies heavily on motivating potential helpers, thus making the role of media even more salient. I will present five studies conducted on this topic. Study 1 will demonstrate why a substantial percentage of people prefer CMC to FtFC when seeking help. Studies 2-4 will compare help-seekers' and helpers' perceptions of message effectiveness when requesting / being asked via CMC versus FtFC, to explain why the former is much less persuasive than the latter. Finally, Study 5 will investigate the same effect when participants ask close friends and acquaintances, rather than strangers, for help. Each of these studies will capture actual compliance rates, allowing us to compare help-seekers' expectations to reality.

Drawing from abundant research asserting the reduced effectiveness of persuasion in CMC, I predict potential helpers to be less inclined to offer help via CMC than via FtFC. More importantly, I expect that help-seekers will overlook the ineffectiveness of CMC, as a result of egocentric biases that limit help-seekers' ability to take potential helpers' perspectives into consideration. Since CMC offers more convenience and less embarrassment than an FtF interaction, help-seekers are prone to use CMC to communicate their needs; this may have the consequence of lower compliance and less help received overall.

Ch. 2 – Literature review

Introduction

When asking for help, help-seekers typically want to know how likely the person they are asking is to say "yes." The purpose of this research is to examine how accurate help-seekers are at predicting compliance with their requests in different contexts—specifically, when seeking help in person versus over email. The predictions I make in this thesis are grounded in the psychological literature of egocentrism and perspective taking. I argue that help-seekers make inaccurate predictions across these two channels because they fail to effectively take the perspective of helpers and assess how likely they are to grant help.

Specifically, requesters need to recognize helpers' motives for helping to accurately predict the likelihood of receiving help. Thus, this thesis is also grounded in the literature related to helping motivations. These motivations may differ depending on the communication channel (FtFC vs. CMC). Effective persuasion heavily depends on a communication channel's qualities through which verbal and nonverbal clues and information are exchanged, so related literature on media richness will be discussed as well.

The last part of my thesis pertains to help-seeking between friends, as opposed to strangers, and I look at how closeness affects both compliance and prediction accuracy across different communication channels. The question of relationship context has not received enough attention. The existing literature solely investigates prediction accuracy when making requests of strangers. Thus, I will investigate the specific helping motives of friends toward the end of this chapter.

Since the 1990s, social interaction via the Internet has been and continues to be a popular topic of study (Bargh & McKenna, 2004). Today, it is the norm to chat with others using text-

based messaging (Rainie, 2005). For instance, about 73% of American adults use the Internet and believe that it has improved the way they get information and communicate. Furthermore, on any given day, about 52% of American Internet users are engaged in communication via email. In addition, about 53% of adults use instant messaging (Shiu & Lenhart, 2004). Within seconds, these methods of communication allow one to interact with friends, colleagues, relatives, and even strangers. Advancements in technology, including the introduction of the Internet and cell phones with Internet capabilities and wireless technologies (e.g., Bluetooth), have provided people with a larger variety of communication options, greater mobility, and more efficiency when communicating with others.

Text-based computer-mediated communication (CMC),[1] such as email and instant messaging, facilitate interpersonal interaction in ways that differ from everyday face-to-face interactions and other communication media (e.g., the telephone). Specifically, CMC allows for asynchronous, non-present communication (Di Blasio & Milani, 2008). In other words, not all participants in an interaction or communication are necessarily present in the same physical location, and the interaction does not need to take place in real time. In addition, individuals may maintain a self-selected level of anonymity when communicating with others through CMC (Bargh & McKenna, 2004). This means that one can choose how much personal information to reveal during text-based communications. Hence, CMC may result in a less rich interaction since it restricts important nonverbal information and cues that may normally be available during face-to-face interactions (Sproull & Kiesler, 1986). More specifically, text-based communications may be less meaningful due to increased difficulties in interpreting the nuances of the conversation since nonverbal cues (e.g., facial expressions or tone of voice) and other indicators

[1] Email and CMC are used interchangeably throughout this document.

that are important to social interactions, including social status cues (e.g., attire, posture, proximity during interaction, etc.), may be restricted (Guadagno & Cialdini, 2007).

Restricted approaches to computer-mediated communication (CMC)

Classic theories of CMC are built on the assumption that the mediated nature of the computer results primarily in negative interpersonal effects due to the impersonal nature of that medium (Tanis & Postmes, 2007). For instance, Social Presence Theory emphasizes the importance of the *salience* of communicators in online interactions (Ramirez Jr & Zhang, 2007). The level of communicator salience depends directly on the number of cues (non-verbal signals, such as facial expressions) available through a medium (Gunawardena & Zittle, 1997). Social presence is therefore less salient in CMCs, where the number of available cues is limited, ultimately affecting the interpersonal interaction, for example, by reducing the emotional connection to the interaction partner (Ramirez Jr & Zhang, 2007).

Similarly, the Social Context Cues and Reduced Cues approaches propose the importance of status and position cues in electronic communications, suggesting that the absence of such cues and the depersonalizing nature of the computer lead to greater anonymity and less focus on one's status and position. Consequently, this can lead to more uninhibited verbal behaviour and poorer interactions (Kiesler, Siegel, & McGuire, 1984). Additionally, such approaches emphasize the importance of nonverbal cues in determining how to interact or behave appropriately in a given context (Sproull & Kiesler, 1986). When cues are limited or unavailable, individuals tend to act in a self-focused and unregulated manner (Sproull & Kiesler, 1986).

Other cues-based approaches assume that individuals do not engage in the same kind of impression formation about their interaction partner(s) as they would in an FtF interaction, because the communication channel causes attention to switch to the self and the task at hand

(Ramirez, Walther, Burgoon, & Sunnafrank, 2002). Additionally, the Cuelessness model utilizes a similar approach in which the absence of nonverbal cues and identifiability leads to more impersonal interactions (Rutter, 1987). Indeed, Rutter and colleagues (Rutter, Stephenson, & Dewey, 1981) demonstrated that settings that differed in the number of available cues resulted in differences in conversations: for example, settings with fewer transmission cues led to more task-focused, impersonal, and less natural conversation.

The Uncertainty Reduction Theory (URT) provides additional insights into the importance of nonverbal information in interactions (Tanis & Postmes, 2007). Specifically, one of the main goals in an interaction is the reduction of uncertainty and ambiguity (Berger & Calabrese, 1975). According to URT, individuals attempt to reduce their uncertainty in a situation to a more acceptable or comfortable level, allowing for successful and understandable interactions (Goldsmith, 2001). Consequently, individuals rely on the exchange of information (which may include nonverbal cues) to reduce uncertainty in interactions (Tanis & Postmes, 2007). This means that one may use status cues such as appearance (e.g., attire or posture) to form an impression or make a judgment about a communication partner in order to reduce the level of uncertainty about that partner (Berger & Calabrese, 1975). Hence, restriction of cues may have a negative impact on the ability to form accurate impressions and reduce levels of uncertainty.

Each of these approaches assumes that the physical visibility, presence, and proximity of interaction partners will not only provide the necessary nonverbal information needed for communication, but also that it leads to better interpersonal interactions as compared to restricted communications such as CMCs (Tanis & Postmes, 2007). The outcome of each approach is the same: CMC is a less rich medium in that it restricts important nonverbal information, whereas

FtFC allows important interpersonal cues such as facial expression, body language, tone of voice, and the like to be detected. Accordingly, CMCs lead to more impoverished interactions, whereas FtFCs result in more personal and successful interactions.

I theorize that this difference in the richness of CMCs versus FtF interactions plays a determinant role in the effectiveness of attempts at social influence, such as help requests. When help-seekers are immersed in one communication channel or another, however, they may not be aware of the information that is lost or gained via a particular communication medium from the perspective of a potential helper.

Current approaches to CMC

Although classic models of CMC concentrated on "restricted cues" and successive inefficient interactions, more recent theories have focused on groups as the level of analysis (Tanis & Postmes, 2007). In particular, Lea and Spears (Lea & Spears, 1991) introduced the Social Identity/Deindividuation (SIDE) model in which interactants adapt to communications with fewer social cues.

The SIDE model critiques the classic approaches to CMC by asserting that the medium is even more social than FtF interaction (Spears, Postmes, Lea, & Wolbert, 2002). The model capitalizes on social identity theory and self-categorization theory, which consider essential roles for self-identification and group interaction. It redefines social interaction as the interaction between group members that is governed by group norms (Spears et al., 2002). With this in mind, the model suggests that in anonymous conditions (e.g. CMC) group norms predict members' behaviour. The group membership of the other party in an interaction may be deduced from implicit cues such as language, jargon, and the task at hand, e.g., whether the task is masculine or feminine (Spears et al., 2002). The model claims this process leads to a new social

regulation in CMC, which must be distinguished from the assumption of unregulated interaction claimed by classic approaches.

Despite the various and contradictory approaches, it is evident that nonverbal information plays an essential role in communication. Even if interactants can adapt to the limited nonverbal cues in CMC, by using the social information (e.g., group norms and group membership) that may serve as a guide to an interaction for example (Postmes & Spears, 2002), people are still affected by filtered-out cues in interactions. After all, adaptation implies that one was at least initially affected. Help-seeking situations are not exceptions. In fact, it has been shown that "cues to identity" lead to more positive interpersonal evaluation in CMC (Tanis & Postmes, 2007). Hence, further examination of helping behaviour in CMC is warranted.

Communication modality and persuasion

Today, messages may be sent or received easily through various online channels. Those who communicate through text-based messaging or CMC may often be approached with an even larger number and wider variety of persuasion attempts from sources they know and, more interestingly, from sources of unknown credibility (Flanagin & Metzger, 2000). Therefore, further exploration of how communication channels influence the effectiveness of persuasion messages is essential.

For the purpose of this research, I considered the following definition of interpersonal persuasion as cited by Wilson (2003):

> Interpersonal persuasion occurs when two or a few people interact in a way that involves verbal and nonverbal behaviors, personal feedback, coherence of behaviors (relevant fit of remarks and actions), and the purpose (on the part of at least one interactant) of changing the attitudes and/or behaviors of the other(s). (Reardon, 1991, p. 112)

Related literature in social psychology shows that nonverbal behaviours are essential for persuasion. For example, greater vocal pleasantness (e.g., fluency and pitch variety) leads to more persuasiveness (Burgoon, 1990). Even a minor modification in body positioning, such as "limb-outward or open-body positions" rather than "limb-inward or closed-body positions," has been shown to affect attitude changes among audiences (McGinley, LeFevre, & McGinley, 1975). Indeed, researchers have shown that filtering out nonverbal cues drastically changes the persuasiveness of a message.

As discussed earlier, CMC constrains nonverbal information important to social interactions. Hence, one can expect the persuasion process and results to be different over such a restricted medium when compared to media that convey more social cues. For example, Chaiken and Eagly (Chaiken & Eagly, 1983) examined how communication channels impact persuasion. Subjects were exposed to a persuasive message through one of three communication channels: writing, videotape, or audiotape. The likeability of the message sender was also manipulated. When the communicator was likeable, subjects in both video and audiotape conditions showed more attitude changes than subjects in the written message condition. On the other hand, when the communicator was not likeable, participants in the written message modality exhibited the greatest attitude change. The authors concluded that the more salient the communicator's cues (in audio and videotaped vs. written messages), the greater the effect (both positive and negative) they will have on the persuasiveness of the message. These findings offer evidence for how the persuasion process is affected by using a channel that restricts nonverbal cues.

Further, the elaboration likelihood model (Petty & Cacioppo, 1984) and the heuristic/systematic model (Chaiken, 1980; Chen & Chaiken, 1999), both of which are dual-process models of persuasion, anticipate different persuasion patterns depending on the

communication channel. Specifically, these models suggest that FtF or audio persuasion messages (in which more social cues are available) are more likely to be peripherally processed; i.e., individuals should think less systematically and more heuristically about the message. This means that when more social cues are available less cognitive elaboration is needed because individuals may readily rely on implicit qualities, such as credibility or attractiveness, when thinking about a message, resulting in minimal deliberation about the message (Chaiken, 1980). On the other hand, text-based persuasive messages (where fewer social cues are available) are likely to be centrally processed; i.e., individuals should think more systematically and give the message more consideration (Guadagno & Cialdini, 2002; Guadagno & Cialdini, 2007). With fewer available social cues, individuals need to be more focused and think more carefully about the actual message. Consequently, due to the availability of certain cues leading to different message processing strategies, the communication modality should affect the interpretation and subsequent effectiveness of persuasive messages.

Similarly, Morley and Stephenson (Morley & Stephenson, 1970) demonstrated that the social constraint of some communication modalities might influence the persuasive impact of messages in negotiations. Participants who were involved in two-person negotiations were more easily persuaded by FtF interactions than by phone interactions (Williams, 1977). In sum, research by both Chaiken and Eagly (Chaiken & Eagly, 1983) and Morley and Stephenson (1970) suggest that the communication modality may influence the extent to which certain cues are salient and may ultimately affect the level of persuasiveness of a message.

In accordance with the above-noted studies, several additional differences have been reported between FtFC and CMC in empirical studies of interpersonal persuasion. When compared to FtF interactions, CMC has been shown to decrease the role of peer influence

(Smilowitz, Chad Compton, & Flint, 1988); increase private self-awareness, e.g., personal feelings, beliefs, and values (Matheson & Zanna, 1988); increase the influence of less dominant persons (Citera, 1998); and reduce the perceived effectiveness of common persuasion strategies (Wilson, 2002).

Message-senders' perception of persuasion in CMC

So far, the majority of CMC persuasion studies have focused on the constraints of the media from a message *receiver's* point of view. Very few researchers have explored the message *sender's* point of view—in particular, the sender's perceptions of the effectiveness of different communication channels (CMC vs. FtF) for persuading others.

In one notable exception, Wilson (Wilson, 2003) looked at the perceived effectiveness of interpersonal persuasion in team contexts (i.e., within teams working on large software projects) and in individual contexts (i.e., within classrooms where students communicated openly with other students or the instructor). All participants used FtFCs and CMC for three months to interact with one another and took on the roles of both message sender and receiver. By considering various contexts, the author aimed to reveal the effect of context on the perceived effectiveness of different media. His results demonstrated a significant media effect in which FtFC was perceived to be more effective than CMC, as well as an interaction effect between context (team or individual) and media in terms of the perceived effectiveness of CMC. This interaction indicated that CMC was perceived to be more effective in an individual context than in a team context; however, FtFC was perceived to be equally effective across both contexts.

Two points are particularly noteworthy in Wilson's (2003) studies. First, he looked at the perceived effectiveness of FtFC vs. CMC within an ongoing relationship where communicants knew each other and, more importantly, met on a regular basis. This changes the dynamics of a

persuasion attempt. For example, in a persuasive email message, both the message sender and the receiver would know that they would probably be meeting for an FtF interaction in a few days if the message receiver did not comply. This knowledge likely affected the message receiver's decision regarding whether or not to comply with a request, as well as the message sender's perception of the effectiveness of a given medium.

Second, the fact that data were collected from participants after a relatively long period of interaction using both communication media, and that all participants had been moving back and forth between the two roles (message sender and receiver), may have biased the results toward the message receiver's perception. Participants may have simply recalled their own reactions as message receivers for each of the two media at the time of completing the survey questionnaire. Thus, they would have had all the incidents of success or failure of the two media readily available in their memory from both perspectives when making judgments about their effectiveness.

Interestingly, even if message senders accurately predict the effectiveness of a particular medium, they do not necessarily choose the most persuasive one. Indeed, a stream of research suggests that, in addition to a medium's perceived effectiveness, concerns with impression management factor into communicants' media choice (Bargh, McKenna, & Fitzsimons, 2002; Feaster, 2010; Hancock & Dunham, 2001; McLaughlin, Osborne, & Ellison, 1997; O'Sullivan, 2000; Parks & Floyd, 1996; Roberts & Parks, 1999; Utz, 2000). Specifically, O'Sullivan (2000) hypothesized that if one feels that one's preferred impression is threatened in an FtF interaction one is more likely to choose CMC. The same effect was discovered by Feaster (2010). Feaster found that in face-threatening interactions (e.g. looking incompetent) a more limited medium may be preferred (if few options are available) due to the greater degree of information control it

offers. Hence, in a help-seeking case, requesters may prefer email to interacting FtF to avoid the risk of rejection or being perceived as incompetent.

To overcome the above-mentioned issues in Wilson's (2003) research and to investigate the adverse effect of impression management when selecting which medium to use to make a request, I decided to employ a one-time help-seeking incident via either FtFC or CMC in my experiments. I considered a help-seeking situation for the following reasons: 1) a help-seeker can request help from virtually anyone, a close friend to even a total stranger. Help-seeking between two strangers rules out any alternative explanation regarding the effect of past or future interactions on the helper's or help-seeker's expectations, making the effect of media even more salient; 2) FtF and email help-seeking situations are equally conceivable; and 3) almost everyone experiences a helping situation every day either in a help-seeking or helping role, so having more knowledge of the effect of media in this context will have a wide range of implications.

Perspective-taking and social prediction

As indicated above, there is a substantial amount of evidence from the CMC and communication literatures demonstrating a reduction in persuasiveness when persuasion is attempted via CMC rather than FtFC. The main purpose of my research, however, is to examine the message senders' (help-seekers') predictions regarding the effectiveness of CMC and to contrast these predictions with the helpers' actual behaviour. I expect helpers to offer more help in FtF conditions than they do in CMC; however, I anticipate that help-seekers will fail to acknowledge the difference between the two media. This hypothesis is based on the literature of egocentrism and perspective-taking in social predictions. Below is a brief review of the relevant research.

Social judgment is essentially egocentric. When people try to imagine the perspective, thoughts, or feelings of someone else, a growing body of evidence suggests that they use themselves as an anchor or reference point. Therefore, the assessment of others' perspectives is influenced, at least in part, by one's own (Epley, Keysar, Van Boven, & Gilovich, 2004; Fischhoff, 1975; Fussell & Krauss, 1991; Gilovich, Savitsky, & Medvec, 1998; Gilovich, Medvec, & Savitsky, 2000; Hoch, 1987; Kelley & Jacoby, 1996; Keysar & Bly, 1995; Keysar, Barr, & Horton, 1998; Nickerson, 1999; Nickerson, 2001). This leads to errors when trying to determine what someone else might think or feel in a given situation. One starts from one's own perspective (how one feels right now) and does not adjust sufficiently to accurately judge someone else's (Epley et al., 2004). As a result, the prediction of others' (e.g., helpers') feelings and behaviour is inherently biased toward the predictor's (e.g., help-seeker's) perspective (Boven & Loewenstein, 2005; J. I. Krueger, 2003).

A clear example of this tendency appears in a classic music-tapping study conducted by Elizabeth Newton (Newton, 1990). Participants in her study were asked to tap out the rhythm of a well-known song to a listener and then assess the likelihood that the listener would correctly identify the song. The results were striking: tappers predicted that approximately half the listeners would identify the song, when in fact the actual identification rate was 3% (Kruger, Epley, Parker, & Ng, 2005).

The reason for this huge overestimation is egocentrism on the part of tappers. When tapping, they hear the music along with the singer's words. On the other hand, listeners try hard to make sense of a series of nonperiodical taps; they cannot even figure out if the brief moments of silence between the taps come from the song's actual notes or the incompetence of the tapper. The tapper's perspective is also much richer than that of the listener's. This difference makes it

even harder for tappers to make enough of an adjustment to take the listeners' perspectives into consideration (Kruger et al., 2005).

An analogous example comes from a study by Keysar and Henly (Keysar & Henly, 2002) in which participants read several ambiguous sentences aloud (e.g., "Angela killed the man with the gun") to other study participants. Speakers read the statement after reading a scenario that resolved the ambiguity of the sentence (e.g., indicated whether the gun was a murder weapon or a possession of the victim); however, this scenario was unavailable to the listeners. As in the case of the tapping study, the speakers assumed that what was obvious to them (the meaning of the sentence) would be obvious to the listener. This is congruous with the explanation of Newton (1990), suggesting that the overestimation was due, at least in part, to the subjects' underestimation of the message's ambiguity.

Although daily interactions are far richer than the music-tapping study, Newton's (1990) research results are applicable to everyday mediated communication, specifically CMC. Indeed, in a series of studies, Kruger and colleagues (Kruger et al., 2005) examined egocentrism in social predictions in email communication. In these studies, message senders were overconfident in their ability to communicate via email and egocentrically predicted that message receivers would detect the sarcasm in their messages. Plausibly, one can assume that the same mechanism would be in place when sending help-seeking email messages (i.e., help-seekers are probably overconfident in their ability to convince potential helpers via email to comply with their request).

Helping behaviour in social psychology (FtF situations)

For the purposes of this study, I am interested in examining whether helpers' impulse to help is weakened when help is sought by an indirect and less rich communication channel, such

as email, as compared to a richer communication channel, such as FtF, and whether interactants, specifically help-seekers, acknowledge this difference. To this end, I briefly discuss below the helping literature and helpers' motives for helping.

A number of psychologists have examined the various motives people have for helping others. Although each of these motives will push a potential helper toward actual helping behaviour, their origin can be either internal (pure altruism) or external (social expectation). The following is a brief explanation of these forces.

Empathy and trust

Batson and colleagues (Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983) pinpointed two distinct emotions that emerge when a potential helper sees another person in need: personal distress and empathy. Moreover, they suggest that these two emotions lead to distinct motives for helping. Personal distress leads to an egoistic incentive to help, whereas empathy creates an altruistic motivation. Altogether, a massive body of literature shows that empathy, in general, is a more effective driver of helping behaviour (Batson, Fultz, & Schoenrade, 1987; Batson, Duncan, Ackerman, Buckley, & Birch, 1981).

Neuropsychologists have found a strong correlation between trust and empathy. It has been well documented that oxytocin plays a crucial role in both empathy and trust (Kosfeld, Heinrichs, Zak, Fischbacher, & Fehr, 2005; F. Krueger et al., 2012; Luo et al., 2015). Furthermore, other scholars have shown that trust is a prerequisite for empathy, where greater trust is associated with greater empathetic feeling (Joireman, Needham, & Cummings, 2002) and a higher propensity to trust leads to more altruism (Straume & Odèen, 2010). Furthermore, abundant studies show the significance of implicit cues in the formation of trust. Facial cues and appearance (e.g., smiling, having a babyface) play a crucial role in generating interpersonal trust

(D. S. D. Berry & McArthur, 1986; D. Berry & Brownlow, 1989; Brownlow, 1992; Scharlemann, Eckel, Kacelnik, & Wilson, 2001; van 't Wout & Sanfey, 2008). In fact, judgments of trust from facial cues occur almost instantaneously (Willis & Todorov, 2006). Therefore, filtering out these cues will likely substantially hinder the formation of trust and, in turn, empathetic feelings.

Social forces

In another attempt to identify specific helping motivations, Grant and Mayer (Grant & Mayer, 2009) suggested that prosocial behaviours are guided not only by prosocial motives but also by impression management (i.e., looking good). They claim that the two motives interact positively to promote even more prosocial behaviour. Indeed, in many cases people are motivated to comply with a request for help to avoid undesirable consequences, e.g., feelings of embarrassment that might be induced by noncompliance (Flynn & Lake, 2008). On the other hand, Grant and Gino (Grant & Gino, 2010) showed that desirable consequences also encourage people to help. By receiving expressions of gratitude, helpers experience stronger feelings of social worth, which in turn encourage them to exhibit prosocial behaviour in future interactions. Interestingly, those who are motivated due to social forces were found to avoid helping situations as much as possible even if the requester is left high and dry as a consequence (Cain, Dana, & Newman, 2014). Please keep in mind that all of these social forces operate and were explored in direct FtF helping situations.

On the other hand, a rich body of literature related to help-seekers' decisions to express or withhold their need for help explores the link between embarrassment and requesting help. For example, in a classic study Milgram required his graduate students to ask strangers in a subway to give up their seats. The participants found the task "unnerving" and even "nauseating"

(Flynn & Lake, 2008). Many other researchers have examined how the fear of embarrassment hinders help-seeking (DePaulo, Dull, Greenberg, & Swaim, 1989; Phillips & Bruch, 1988). As discussed previously, media selection theorists have shown that impression management factors into communicants' media choice (Feaster, 2010; Hancock & Dunham, 2001; O'Sullivan, 2000). Hence, an email request may offer requesters a way to make a needed request while avoiding FtF awkwardness and embarrassment.

Preliminary evidence in the literature suggests that helping motives with social roots (i.e., the social cost of saying "no", impression management, being socially valued) are diminished in CMC. In addition to my earlier discussion about Communication modality and persuasion, which demonstrated less effectiveness for persuasive messages (including requests for help) in the CMC domain, I will review one of these studies in greater detail here.

Matheson and Zanna (1988) make a distinction between public and private self-awareness that is relevant to the current studies. They describe public self-awareness as the extent to which one is sensitive to others' evaluation of one's overt characteristics (e.g., physical appearance). Public self-awareness is induced when one is exposed to another's attention (e.g., lecturing before a class) and is derived from taking others' perspectives about oneself. Private self-awareness, on the other hand, concerns one's more covert characteristics, such as beliefs and attitudes, which are less publicly available. Private self-awareness is enhanced when one evaluates oneself in a personal sense (e.g., introspection) and is derived from self-standards and internal needs (Matheson & Zanna, 1988).

Matheson and Zanna (1988) found that, relative to the FtF comparison group, subjects in the CMC group reported higher levels of private self-awareness and lower levels of public self-awareness. In the current studies, this finding would suggest that potential helpers' public self-

awareness should be low when help is requested via CMC, meaning that they should be less concerned about others' evaluation and attention. In other words, concerns about impression management, the social cost of saying "no", and being socially valued might not be as strong in the CMC condition as in the FtF condition. On the other hand, their private self-awareness should remain high, so they are expected to be more attentive to the various costs imposed by help-seekers. Altogether, the motives for helping should be weaker and the discouraging factors stronger for helpers in the CMC condition. Therefore, it is expected that less help will be offered in the CMC condition.

According to the above-stated argument, helpers should be less motivated to offer help in CMC than in FtFC. Yet, according to the arguments made earlier, CMC should exacerbate help-seekers' egocentric biases. Taken together, these two facts should lead to large differences between predicted and actual compliance with a helping request.

This basic prediction was tested by Flynn and Lake (Flynn & Lake, 2008), who compared help-seekers' and helpers' perspectives in both direct and indirect—albeit not CMC—help-seeking contexts. The indirect situation used by these researchers resembles the CMC condition in many respects, as discussed throughout this document. I will discuss these experiments in the next section.

Flynn and Lake (2008): Help-seeking studies

So far, the cited literature confirms that a considerable number of social cues are filtered out in CMC, leading to a decrease in socially rooted helping incentives such as impression management and being socially valued. Weaker helping incentives should consequently lead to lower amounts of help offered in CMC contexts. Consequently, CMC is a less effective channel of persuasion than FtFC. The main objective of this research, as stated before, is to explore

whether message-senders acknowledge this fact. The work most closely related to this question is that of Flynn and Lake (2008).

In the first phase of a series of studies, Flynn and Lake (2008) examined whether help-seekers underestimated others' willingness to help in FtF situations. In two studies, they asked participants to predict the likelihood that others would comply with a direct request for assistance in a variety of helping situations and then had the participants make the request on their own. They also looked at the same question in a natural field setting (Study 3). In each case, participants underestimated, by as much as 50%, the likelihood that others would agree to the direct request for help. Flynn and Lake's (2008) findings repeatedly demonstrated that help-seekers underestimated the rate of compliance in FtF contexts.

Additional studies using hypothetical (Studies 4 & 5) and real (Study 6) helping situations examined the specific psychological explanation for this underestimation. Flynn and Lake (2008) hypothesized that help-seekers fail to consider the potential helpers' discomfort when they are asked for help, particularly the discomfort they would experience by saying "no" to a direct request for help. Denying a request for help can be awkward and embarrassing because it violates a social norm to assist those in need.

In Studies 4 and 5, Flynn and Lake (2008) measured the amount of discomfort perceived by requesters and targets of a request and manipulated the social pressure to comply through the directness of the request (i.e., implying that someone is in need vs. clearly asking for help). An example of this manipulation would be someone who is clearly in need simply catching a potential helper's eye as opposed to explicitly asking for help by stating directly, "Will you help me with this?" The findings from both of these studies confirmed the theorized mechanisms,

demonstrating that help-seekers do not sufficiently attend to the social pressure helpers experience when they are asked directly for help.

In Study 6, Flynn and Lake (2008) demonstrated this same mechanism in a behavioural study. As in Study 5, they manipulated the social cost of saying "no" through the directness of the request. Specifically, they either instructed participants to make a direct, in-person request of targets—"Will you fill out the questionnaire?"—or instructed participants to hand out flyers printed with the same request to targets and then walk away without saying anything. Participants gave their predictions of compliance before directly or indirectly making this request of strangers on campus. The results were interesting. First, they replicated the underestimation effect within the direct request condition. Second, in the flyer (indirect) condition, the pattern was reversed. Participants predicted that they would need to hand out flyers to fewer people than they actually did before one person filled out a questionnaire. Third, participants' predictions about the number of people that they needed to approach were not different in direct and indirect conditions.

By manipulating the directness of the request for help (and subsequent social cost of saying "no"), Flynn and Lake (2008) provided evidence that people asking for help pay less attention to the social costs of saying "no" to such a request than do those being asked. In addition, these findings suggest that this difference may act, at least in part, as a mechanism underlying the underestimation effect. When people were asked to assume the role of a potential helper in Study 5, they gave higher estimates of others' willingness to comply than did those who were asked to assume the role of the help-seeker, particularly when the social pressure to comply was greater.

I argue that asking for help via CMC shares many of the same psychological features as the indirect condition from Flynn and Lake's (2008) sixth study. These researchers successfully reduced the social cost of saying "no" by decreasing numerous social cues, even though the interactants were momentarily in the same place at the same time. CMC offers even less social presence and interaction than this "flyer" condition, since the communication happens asynchronously. Therefore, I predict that help-seekers will overestimate the rate of compliance for similar reasons.

More egocentrism on help-seekers' part

In addition to the explanation offered by Flynn and Lake (2008) regarding the attenuation of the social cost of saying "no," more factors might contribute to the results of that study. As shown in Figure 1, the actual rate of compliance is significantly less than that predicted by the help-seekers when the request was made indirectly. As the authors suggest, from the help-seekers' perspective, the social costs are acknowledged in neither the direct nor the indirect conditions; however, the cost is imposed on helpers in the former, but not in the latter. Hence, in indirect situations where neither of the two groups takes social costs into account, what factor(s) explain(s) this difference? The authors did not discuss this question, which I explain below.

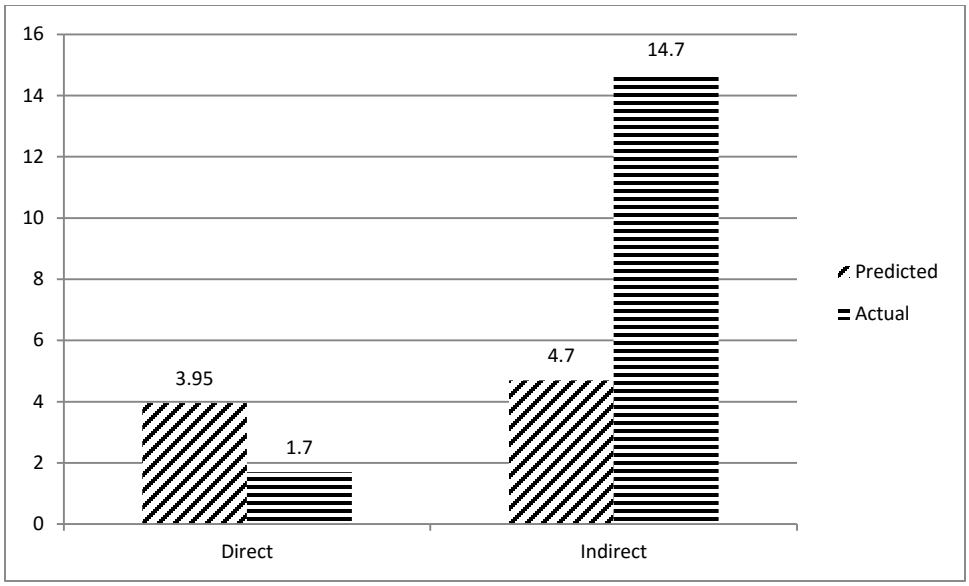

Figure 1 Flynn and Lake's study 6 results (adopted from Flynn & Lake, 2008)

As noted in both the Communication modality and persuasion section and my description of Matheson's study, other helping motives in addition to the social costs of saying "no", might be affected by the directness of a request. These additional motives, i.e., a helper's motive that help-seekers assume is *active* in both direct and indirect situations yet acts only in FtF contexts, may explain the "flip effect" described above. For example, it is plausible to consider that feeling socially valued is deactivated in indirect situations, due to a lack of opportunity to express gratitude, but altruistic motivations, such as empathy, are activated at the same level in FtF and mediated interactions.

The empathy one feels towards someone in need is proportionate to the variety and strength of cues received by the potential helper regarding the help-seeker's trustworthiness as well as the intensity of his / her situation. Those cues evoke feelings and grab the attention of the potential helper which lead to empathy (Slovic, 2010). It is not uncommon to see photos of distressed people in charity advertisements; images of emaciated children fighting for their lives induce more empathy than mere textual advertisements. Provided that the source is trustworthy,

multimedia help-seeking messages enable potential helpers to gain a better perspective on people in need, which in turn leads to more empathy. Generally, the stronger the empathetic feeling aroused, the more helping behaviour observed (Coke, Batson, & McDavis, 1978). As with other helping motives, the extent of trust and empathy is affected by the richness of the channel; however, as discussed on page 19 of this document, it is expected that help-seekers egocentrically assume CMC arouses the same level of trust and empathy in potential helpers as FtFC. In sum I argue that, in addition to socially rooted helping incentives, other motives (e.g., empathy) are also attenuated in CMC; however, help-seekers egocentrically believe these motives are stimulated to the same extent.

Before I discuss perspective taking and reciprocity among friends, I would like to draw the reader's attention to the following point. I included all helping motivations found in my review of the literature. One may think of several other differences between the effectiveness of seeking help via email versus FtF interaction; nevertheless I only included those differences with clear ties to established helping motives. It is possible that other factors I have not explicitly discussed, such as request urgency, could also activate one of the documented helping motives and, in turn, lead to more help being granted.

Closeness, psychological distance, and perspective-taking

The reviewed literature mostly pertains to persuasion and help-seeking situations where no prior relationship exists between requesters and targets. Two interactants, however, can be in any level of relationship, from total strangers in different countries to siblings living in the same house. So far, I have discussed two distinct phenomena: (1) the greater effectiveness of FtFC than email for soliciting help and (2) help-seekers' ignorance of this fact. Now, I will explore how these two phenomena might change for requests made between friends. As you will notice,

my review of the related literature does not offer a clear prediction for how relationship closeness will affect this phenomenon.

To the best of my knowledge, no study has contrasted the effect of media on persuasion attempts between friends or explored the message senders' predictions of how persuasive they are likely to be across different media. That being said, there are two partially conflicting theories that predict results in two opposite directions. The first is Construal-Level Theory (CLT), initiated by Trope and Liberman (Trope & Liberman, 2010). CLT posits four distinct but interrelated dimensions of psychological distance, i.e., social distance (me vs. another person, e.g., a stranger or a friend), temporal distance (now vs. past or future), spatial distance (here vs. a remote location), and hypothetical distance (my current actual situation or role, e.g., a help-seeker, vs. a hypothetical situation or role, e.g., a helper). CLT claims that me, now, here, and my actual situation is the reference point, and the more distant (in any number of the above dimensions) an object is from this reference point, the more psychological distance I will experience from that object. One prediction that follows from CLT theory is that the more psychological distance that exists between myself and another person (again in any number of the above dimensions), the harder it will be for me to take his / her perspective (Liberman & Trope, 2014).

Applying CLT to situations in which strangers seek help via CMC suggests that both requesters and targets should experience high psychological distance across all of these dimensions. Both individuals are thinking about a stranger (high social distance) in a remote location (high spatial distance) who will read or send a message in the future or past (high temporal distance) while occupying a different social role (high hypothetical distance). Psychological distance is additive (Liberman, Trope, & Wakslak, 2007), which means that the

psychological distance between strangers seeking help via CMC is likely to be huge, and should, in turn, lead to perspective taking errors on both sides: helpers should have difficulty trusting and empathizing with help-seekers, while help-seekers should have trouble reading helpers' minds and predicting their behaviour. When friends seek help from friends, some of these types of psychological distance are likely to be mitigated. For example, social distance is definitely lower than for strangers. However, all other forms of psychological distance are still substantially higher via CMC, even for friends. For these reasons, CLT would likely predict a similar pattern of results for friends and strangers—namely, a large gap between predicted and actual compliance.

A second stream of research suggests a different prediction for friends than strangers. This research emphasizes the higher response rate and greater reciprocity among friends compared to strangers. According to neuroscientists, when observing a rejected close friend, people develop the same level of empathetic feeling as if they themselves were rejected (Beeney, Franklin Jr, Levy, & Adams Jr, 2011). The perceived similarity (Perry, Bentin, Bartal, Lamm, & Decety, 2010) and loving emotion (Mazzola et al., 2010) among friends create stronger empathetic feelings compared to strangers. In behavioural studies, it has been shown that friendship has a powerful effect on facilitating responsiveness among interactants (Foot, Chapman, & Smith, 1977). In other studies, Newcomb and colleagues (1982; 1979) found greater mutuality and social responsivity between friends than acquaintances. More interestingly, they also observed that a reciprocal exchange exists between friends regardless of the presence or absence of external rewards—and even in competitive settings (Newcomb & Brady, 1982; Newcomb, Brady, & Hartup, 1979). Without taking the other forms of psychological distance into account, which are accounted for in CLT, these findings strongly suggest higher compliance

rates between friends both in FtFC and CMC compared to strangers, as well as more effective perspective-taking. Thus, this stream of research would suggest that the gap between predicted and actual compliance would be attenuated for friends as compared to strangers.

Ch. 3 – Hypotheses

The interaction dynamics in CMC are very similar to those of the indirect helping situation in Flynn and Lake (2008). In fact, CMC can be assumed to be even *more* indirect, since communication takes place neither at the same time nor in the same place. Two more facts unify the two conditions (indirect and CMC) and help to predict people's behaviour in CMC. First, as discussed earlier, egocentric biases have been found in CMC (Kruger et al., 2005). Similar to what has been shown in Flynn and Lake's (2008) studies, help-seekers in a CMC condition might egocentrically fail to acknowledge the activation or deactivation of motives for helping caused by a change in the communication channel.

Second, according to the bodies of literature regarding Communication modality and persuasion and, Empathy and trust reviewed above, both the requester's social influence and the incentives for helping are decreased when communicating via email as compared to communicating FtF (Wilson, 2002).

Altogether, the research above supports the following three hypotheses:

H1. Asking for help FtF will be more effective than asking for help over email; that is, actual compliance will be greater for help requests made FtF than those made over email.

H2. Help-seekers will not accurately predict the difference in actual compliance hypothesized in H1; that is, there will be no difference in predicted compliance between the FtFC and CMC (email) conditions.

H3. As a consequence of H1 and H2 (and replicating previous research, e.g., (Bohns, 2016; Flynn & Lake, 2008)), help-seekers will underestimate compliance in the FtF condition, but overestimate compliance in the CMC (email) condition.

As argued by Roghanizad and Bohns (2016), it is undeniable that the nonverbal cues that evoke trust and empathy are greatly diminished, if not eliminated, for email recipients. Recipients cannot even be sure the stranger on the other end of an email correspondence is who he or she claims to be. On the other hand, email senders are intimately aware of who they are, as well as their own predicament and trustworthiness. Thus, the question is do email senders appreciate the suspicion with which recipients are likely to view their requests? While email senders likely recognize the limitations of CMC to some degree, research on egocentrism suggests that given the vast discrepancies between the two parties' perspectives, senders will fail to adjust sufficiently for the missing trust and empathy cues available to recipients when anticipating recipients' responses to requests made by email (Epley et al., 2004; Kruger et al., 2005). All in all, while request targets are more likely to trust and empathize with a stranger making a request in person than someone making a request over email, requesters' assessments of how trustworthy and sympathetic they appear in person versus over email are likely to be grossly miscalculated. This line of reasoning leads me to my fourth hypothesis:

H4. Help-seekers will expect helpers to experience the same level of trust and empathy via CMC as FtFC; however, helpers will be more trusting and empathetic when receiving an FtF request compared to a CMC request.

Previous research has shown that the amount of help offered by a potential helper is directly related to the amount of empathy experienced (Coke et al., 1978). Further, the research on trust and empathy reviewed earlier suggests that trust may activate and enable empathy. This reasoning leads me to the following hypotheses:

H5. Differences in *actual* helping behaviour between the FtF and CMC conditions will be driven (i.e. mediated) by differences in helpers' experience of trust and empathy between the two conditions.

H6. Differences in *predicted* helping behaviour will *not* be driven (i.e. mediated) by help-seekers' expectations of helpers' experienced trust and empathy.

As discussed earlier, there are competing predictions for how relationship closeness is likely to affect the gap between predicted and actual compliance. Construal Level Theory (Trope & Liberman, 2010), which takes a variety of factors likely to affect psychological distance into account, predicts a similar pattern of results for friends and strangers, regardless of clear differences in social distance between the two groups. Other research, however, suggests that friends will be more empathetic towards each other, which may mitigate the gap between predicted and actual compliance. My final hypothesis takes into account these two competing predictions:

H7.

a. Drawing from the literature on CLT, I predict that friends will show the same pattern of results as strangers. That is, requesters will overestimate the compliance rates of both friends and strangers over email.
b. Drawing from the literature of reciprocity and empathy (Newcomb & Brady, 1982; Newcomb, Brady, & Hartup, 1979), I predict, alternatively, that friends will show a different pattern of results than strangers. That is, requesters will overestimate the compliance rates of strangers, but not friends, over email.

Ch. 4 – Studies

Overview of studies

The ultimate goal of this thesis is to investigate help-seekers' accuracy in predicting their effectiveness when seeking help FtF versus over email. Thus, the dependent variables in Studies 2-5 are compliance rate (Predicted vs. Actual), and the key independent variable is request medium (FtF vs. Email).

Most of the studies presented below utilize a between-subjects design. That is, help-seekers consider the effectiveness of seeking help *either* FtF or over email without considering the alternative. Study 1 is the only study that utilizes a within-subjects design in which participants explicitly consider the two media when making judgments about the effectiveness of seeking help FtF versus over email.

Study 1 – Email is preferred

As explained earlier, help-seekers egocentrically fail to acknowledge or take into account helping incentives when predicting the likelihood of receiving help in response to a FtF request. As a result, they tend to underestimate the rate of compliance with their requests. When making a request via CMC, on the other hand, those incentives weaken and may lead potential helpers to be less willing to help. Regardless, help-seekers may still neglect the role of these incentives, and therefore overlook the effect of this change on the helpers' compliance.

The above error, in addition to self-presentational goals in media selection (O'Sullivan, 2000) and the convenience of email, leads to important questions: do people prefer to ask for help via email when both options (FtF and email) are available? If yes, what are the factors in their media selection decision? In Study 1, using a within-subjects design, I tried to find answers

to these questions, as well as preliminary evidence of a perspective-taking error on the part of help-seekers.

Methodology

Fifty University of Waterloo students (26 female) were recruited by posting flyers around the campus. Participants were made to believe that they were going to ask 10 strangers to fill out a one-page questionnaire (Appendix

A.9. Study 1 and 3 Questionnaire completed by helpers) and they had to choose between FtF and email as the medium of help-seeking (Appendix A.1. Study 1 Instructions and main questionnaires). They were informed that each completed questionnaire would generate $0.50 in addition to the $5 they would receive for participation. They also learned that FtF choosers would be paid immediately after returning their completed questionnaires to the lab. Email choosers, however, would be paid after four days, which would give recipients enough time to check their email and complete the online version of the questionnaire.

Participants were required to predict their income in each medium of help-seeking before deciding which to use. Before performing the supposed task, they answered an open-ended question to justify their decision. Then they answered two series (randomized order) of theory-derived Likert scale questions (Appendix A.2. Study 1 Questionnaire 1) about how they would feel using each medium (*e.g., The method I chose is less embarrassing than the other method*) and how potential helpers would feel refusing them via each medium (Appendix

A.3. Study 1 Questionnaire 2) (*e.g., How guilty do you think people would feel refusing your request face-to-face / via email?*). After completion of this last questionnaire, participants learned about the deception, were thanked, and paid $10.

Results

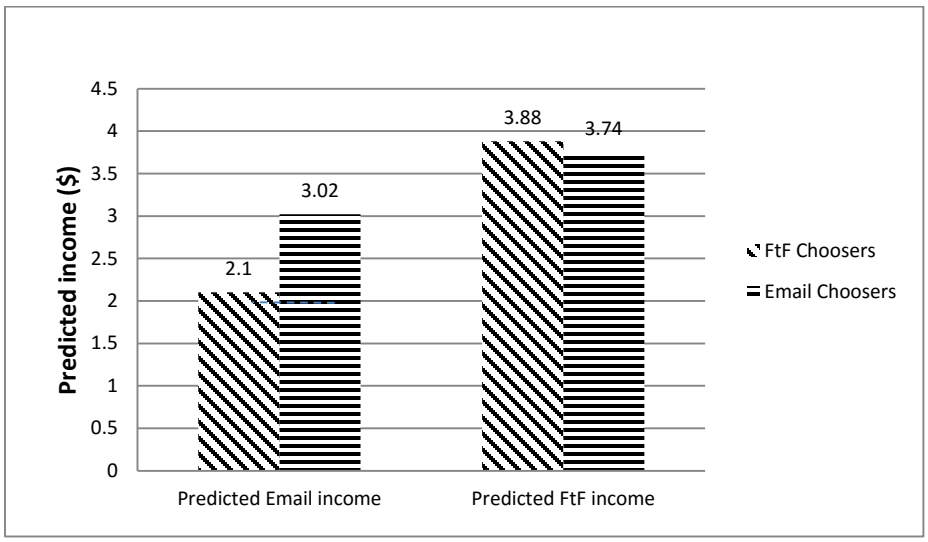

Figure 2 Study 1 Predicted income in Email vs. FtF

No gender difference was observed in this sample for medium preference (logistic regression; β=.55, *SE*=.59, *p*=.35; Appendix

A.4. Study 1 Gender difference SPSS output). A substantial portion of the participants (21 out of 50, i.e. 42%) chose to do the task using email. In total, participants predicted that they would receive more money if they were to make their requests in-person (M = 3.82, SD=1.38) rather than over email (M= 2.49, SD=1.68, F (1, 49) = 32.88, p<0.001, *Partial Eta Squared*= .40). The subset of participants who chose FtFC expected to earn more money by asking FtF (M= 3.88, SD=1.27) than by email (M= 2.1, SD=1.70, F (1, 28) = 48.97, p<0.001, *Partial Eta Squared*= .64). Email choosers, however, did not differentiate between the effectiveness of FtFC (M= 3.74, SD= 1.54) and email (M= 3.02, SD= 1.54, F (1,20) = 3.26, p = 0.086, *Partial Eta Squared*= .14), and they expected to receive more income via email than participants who chose FtFC (M= 2.10, SD= 1.70 vs. M= 3.02, SD= 1.54, t (48)= -1.97, p = 0.055, d=.57), although this latter effect did not reach standard levels of significance. As depicted in Figure 2, the email group's prediction of FtF effectiveness (M= 3.74, SD= 1.54) is not significantly different from the FtF group's (M= 3.88. SD= 1.27, t (48)= .355, p=.72), but they estimated email to be more effective (p = 0.055) than the FtF group did (Appendix A.5. Study 1 Predictions vs. Media selections).

The most cited reasons for participants' medium selections are shown in Table 1. Participants' reported reasons were consistent with our findings on the Likert scale questions (i.e., Awkwardness, Convenience, Comfortable, More Effective) and are explained in detail later.

Email choosers (21 Ps)	Reason	Frequency
	email is faster	6
	email is asynchronous	4
	email exerts less force so it's better	3
	email is less awkward	3
	email is more convenient	3
FtF choosers (29 Ps)		
	FtF is more effective	20
	unknown emails are ignored	17
	FtF has quick results	6

Table 1 Study 1 The most cited reasons of medium selection – open question

The results of the two series of Likert scale questions (i.e., how help-seekers would feel about their task, as well as how they imagined potential helpers would feel – Appendices A.2. Study 1 Questionnaire 1 and

A.3. Study 1 Questionnaire 2) were submitted to the reliability tests shown in the table below. The findings were reliable, identifying three distinguishing factors for media selection decision (i.e., Convenience, Awkwardness, and Effectiveness – Appendix

A.6. Study 1 Factor and reliability analyses), as well as three factors for predicting a helper's feelings and motives (i.e., Awkward to refuse, Empathetic feeling, or Feeling troubled - Appendix

Help-seekers' perspective of selected medium			
Index, Cronbach's α	Convenience α=.852	Awkwardness α=.847	Effectiveness α=.771
Included Measures	More Convenient Less Time Less Effort	Less Embarrassment Less Awkward	More Money Fast Money More Effective
Comments	"More Comfortable" measure was explained by Convenience and Awkwardness indices and was removed from further analysis.		

Help-seekers' perspective of helpers' motives			
Index, Cronbach's α	Awkward to refuse α=.948	Empathetic feeling α=.945	Feeling troubled α=.835
Included Measures	Awkward to refuse Feel guilty refusing Feel uncomfortable refusing Feel embarrassed refusing	Sympathy Compassionate Soft Hearted	Worried Troubled
Comments	The "Easy to refuse" measure was explained by other measures and removed from further analysis. "Feel good" and "Feel Upset" were removed due to significant reduction of index α level as well as low communality in factor analysis.		

A.6. Study 1 Factor and reliability analyses).

Table 2 Study 1 Reliability analysis

Primarily, I was interested in investigating whether any of the perspective-taking measures (the lower half of Table 2) could explain the predicted income difference between the two media conditions. Please note that the measures in the lower half of Table 2 were calculated by subtracting each participant's answers to the email predictions from the corresponding FtF predictions. Hence, these measures should explain predicted income differences (FtF vs. email). A correlation analysis (Table 3) showed that none of those indices predicts the income difference. These results offer preliminary evidence that help-seekers are ignorant of changes to the helpers' motivations across the two media. Furthermore, it suggests that the significant difference of predicted income (i.e., FtF vs. email) might be merely a contrast effect as opposed to a true awareness of potential helpers' experience of requests made through each of these media. I will address this issue extensively in the next studies.

	Awkward to refuse	Empathetic feeling	Feeling troubled
Predicted income difference	r=.116	r=.223	r=.019

P value	.422	.119	.897

Table 3 Study 1 Correlations between perspective taking variable and predicted income difference

Secondly, this data may help to explain the actual reasons for participants' media selection decisions. Table 4 shows correlations between requesters' reactions to making requests in a particular medium (upper half of Table 2) and the medium they ultimately selected.

	Awkwardness	Convenience	Effectiveness
Selected medium	r=.529	r=.710	r= -.628
P value	<.001	<.001	<.001

Table 4 Study 1 Media selection variables correlations

The three possible independent variables and the dependent variable were subjected to a logistic regression (Appendix

A.7. Study 1 Logistic regression) to examine if any of them plays a significant role in the participants' media selection decisions. The results are shown in Table 5.

DV: Selected medium		B	S.E.	Wald	Sig.	VIF
	Effectiveness	-2.831	1.492	3.599	.058	1.186
Sig.<001	Convenience	4.097	2.034	4.059	.044	1.386
Percentage	Awkwardness	.589	.466	1.599	.206	1.357
correct 92%	Constant	-12.551	6.876	3.332	.068	

Table 5 Study 1 Media selection logistic regression

The only significant predictor in Table 5 is Convenience, suggesting that requesters who prefer Convenience chose email over FtFC. The more interesting element, however, is to see whether requesters sacrifice effectiveness to avoid the awkwardness of asking strangers FtF. To investigate this question, the two-moderator model (Figure 3) in Process Macro (Hayes, 2013) was employed with Convenience as the independent variable and Awkwardness and Effectiveness as the moderators.

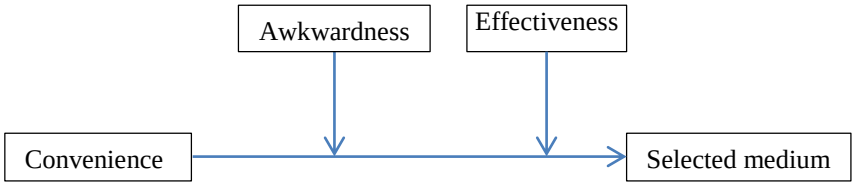

Figure 3 Study 1 Interaction model

The results (Appendix A.8. Study 1 Moderation analysis) show a significant change in media decisions based on the moderators' various levels. Requesters in this study who reported believing that making a request FtF is highly effective (>Mean + SD) and the awkwardness of making a request this way is moderate (Mean± SD) were more likely to prefer FtFC (Index= 5.031, p=.0368, 95% CI = [.308, 9.754]). Requesters who reported believing FtFC is highly Awkward (>Mean + SD) and moderately (Mean± SD) Effective, however, were more likely to choose email (Index= 3.255, p=.049, 95% CI = [.014, 6.495]).

Discussion

The first and most significant outcome of Study 1 is that a substantial percentage (42%) of help-seekers preferred email to FtF as the medium for making requests of strangers, despite the fact that they recognized the superior effectiveness of FtFC. The second interesting finding is the broken link between requesters' perspective taking (of helpers) and their predictions of media effectiveness. Although requesters acknowledge the greater effectiveness of FtFC, they neglect the cause: reduced helping motivations in email requests. They rated potential helpers' feelings and incentives to help at the same level in both media. Please keep in mind that they were asked about all possible incentives at the helpers' end through twelve pairs of questions (FtF vs. email), but their predictions of media effectiveness do not translate into their answers.

Lastly, according to requesters' reports of their own projected experience of making a request over email as opposed to in person, email not only seems to offer a convenient way of seeking help, but also seems to mitigate both the awkwardness of asking others for help and the pain and embarrassment of FtF rejection. As a result, a substantial percentage of help-seekers may choose to seek help by email rather than FtF. Altogether, these findings suggest that requesters are more attentive to their own feelings and fears at the time of media choice, trying to avoid the awkwardness of help-seeking, rather than trying to maximize the probability of receiving help.

Study 2 – Hypothetical helping situations

Study 1 offered evidence that help-seekers egocentrically fail to acknowledge or to take into account potential helpers' concerns when predicting the likelihood of receiving help in response to FtF vs. email requests. Ample evidence in the literature suggests that requesters underestimate the awkwardness of saying no to FtF requests (Bohns, 2016; Bohns, Roghanizad,

& Xu, 2014; Flynn & Lake, 2008; Newark, Flynn, & Bohns, 2014). Hence, they tend to underestimate the rate of compliance with their FtF requests. These concerns, however, are substantially less salient for email requests and may lead potential helpers to be less willing to help. Further, based on my Study 1 results, help-seekers likely will not attend to this change. Accordingly, in my next three studies, I predict that requesters will overestimate the rate of compliance when making requests over email, moderating the underestimation-of-compliance effect that has been established in FtF contexts (Bohns, 2016). In Study 2, I examine this prediction by experimentally assigning participants to the perspectives of a help-seeker or potential helper in three hypothetical helping scenarios. Half the participants read about asking (or being asked) for help FtF, while the other half read about asking (or being asked) for help via CMC. They then made predictions about the likelihood that someone would agree to help in each scenario.

Methodology

One hundred fourteen online participants were recruited in exchange for $1 through Amazon Mechanical Turk. Participants were assigned randomly to one of four conditions in a 2 perspective (help-seeker vs. helper) × 2 request medium (email vs. FtF) between-subjects design. They were instructed to assume the perspective of someone in their assigned condition. To reinforce the role assignment, we asked participants to recall and describe (in a few sentences) a recent episode in which they had played their assigned role. For example, those assigned to the help-seeker (FtF or email) condition were asked to read the following instructions:

Please take a moment to recall a time recently when someone agreed to do a favour for you [that you asked for over email]. Think about what it was like to ask for that favour. What did

you think? How did you feel? In the space below, please write a few sentences about what the favour request was and what the experience was like (e.g., your emotions, your concerns).

The instructions for those assigned to the potential helper condition were very similar but written from the viewpoint of the person being asked for help either FtF or via email:

Please take a moment to recall a time recently when [someone emailed you to ask you for a favour and you accepted] you agreed to help someone. Think about what it was like being asked for that favour [via email]. What did you think? How did you feel? In the space below, please write a few sentences about what the favour request was and what the experience was like (e.g., your emotions, your concerns).

After completing this preliminary task, participants were presented with three scenarios that described different episodes of helping behaviour. To avoid a ceiling effect, I tried to describe requests that were inconvenient enough to elicit some variance in reported compliance rates. Each of the scenarios was written from the participant's perspective in the role they had been assigned. For example, participants who were assigned to the potential helper [email] condition were asked to read the following:

Imagine the following situation:

You are at home on a Sunday afternoon when one of your neighbours knocks on the door and says [when you receive the message below through Facebook[2] from one of your neighbours whom you have seen around]:

"Hello. I work for a non-profit organization, and I need to conduct a few random face-to-face interviews to better understand where people in the community stand on a number of issues. The

[2] If two strangers have already exchanged email addresses they are not strangers anymore. But anyone can look for others' Facebook page prior to any personal interaction.

interview will take about a half-hour of your time. I'm wondering if you would be willing to meet me in the coffee shop down the street to answer some questions. I would really appreciate it!"

Those assigned to the help-seeker condition read the same scenario written as follows:

Imagine the following situation:

It is a Sunday afternoon and you are working for a non-profit organization that has asked you to interview people to find out where they stand on a number of issues. You go to one of your neighbour's houses, knock on the door and say:[You are searching Facebook for people in your community and find one of your neighbours. You send the below message to this neighbour:]

"Hello. I work for a non-profit organization, and I need to conduct a few random face-to-face interviews to better understand where people in the community stand on a number of issues. The interview will take about a half an hour of your time. I'm wondering if you would be willing to meet me in the coffee shop down the street to answer some questions. I would really appreciate it!"

Participants in all conditions were then asked the same set of questions (Appendix B.1. Study 2 Questionnaire). First, they were asked to estimate the likelihood of offering help. Second, they were asked three questions about the discomforting circumstances facing the potential helper: (a) how difficult do you think it is to say "no" to this request?; (b) how awkward do you think it would be to say "no" to this request?; and (c) how embarrassed do you think one would feel if they said "no"? Responses to these three questions were then averaged to create an overall measure of appreciation for the potential helper's awkward position.

The other two scenarios involved the participants proofreading a classmate's 10-page writing assignment and letting a fellow college student give the participant's cellphone number to a stranger. The complete scenarios are reported in Appendix

B.2.

B.2. Study 2 Scenarios. Each participant read and responded to all three scenarios.

Results

The data were submitted to a 2 (role: help-seeker vs. potential helper) × 2 (communication medium: FtF vs. CMC) × 3 (type of scenario) mixed-model ANOVA with repeated measures on the last factor (Appendix

B.3. Study 2 Repeated measure analysis. The second order interaction was not significant ($F < 1$), suggesting that the pattern of results did not differ according to the content of the individual scenarios so the results of three scenarios were averaged together.

A significant interaction effect emerged between role (helper vs. help-seeker) and communication medium of request (FtF vs. CMC), F (1,104) = 4.25, p = .04. This interaction reflects the finding that helpers in the FtF condition (M=4.59, SD=1.25) reported that they would be more (*n.s.*) likely to say "yes" to a request than help-seekers expected (M=4.04, SD=1.09), F(1,53)= 4.16, p=.09. In the CMC condition, however, helpers (M=4.19, SD=1.15) reported that they would be *less* (*n.s.*) likely to say "yes" than help-seekers expected (M=4.51, SD= 0.85), F(1,51)= 1.35, p=.25 (Figure 4). Interestingly, help-seekers' predictions of compliance were marginally significantly less in FtF (M=4.04, SD=1.09) compared to email (M=4.51, SD= 0.85), F(1,54)= 3.23, p=.08 conditions.

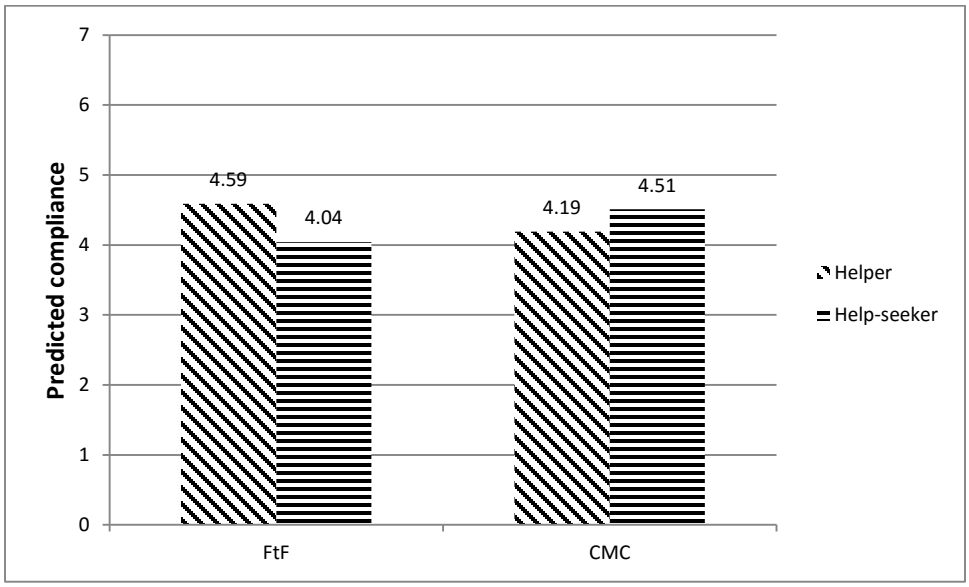

Figure 4 Study 2 Predicted compliance / Role vs. Media

Discussion

By manipulating communication medium (i.e., CMC vs. FtF) and role, these results provide preliminary evidence supporting my argument that people asking for help pay less attention to the ineffectiveness of email as a help-seeking medium than do those being asked, thus resulting in an overestimation of the amount of help offered in the CMC condition.

Although Study 2 supports my claim that potential helpers perceived to be more responsive to an FtF request for help than in the CMC condition and that help-seekers do not acknowledge this fact, the study relies on hypothetical scenarios. In fact, this may be one explanation for why the planned contrasts were not significant. In my next study, I attempted to replicate these effects using actual requests. In Study 3, laboratory participants were instructed to ask for help either FtF or via email.

Study 3 – Experiment with student participants

In Study 3, I attempted to replicate the findings of Study 2 using real requests to affirm my original prediction about less help being offered in the CMC condition. I also hypothesized that help-seekers would fail to adjust their understanding of helpers' perspectives in the CMC versus the FtF conditions and would therefore expect to receive the same amount of help in the two conditions. This should result in an underestimation of compliance FtF and an overestimation of compliance via CMC.

Methodology

Four hundred and eighty-five university students participated (49 requesters, 437 targets). Three requesters did not complete the study as instructed, leaving 481 participants (46 requesters [31 female], 457 targets) in the final dataset. Sample size was determined by the sample size

used by Flynn and Lake (2008; Study 1; *N*=23 requesters). The original effect was large

(*d*=1.096), so this sample size ensured >80% power.

FtF Condition. At the beginning of the experimental session, participants in the FtF condition were given the following instructions: "*In this study, you will ask strangers (in person) for a favour. The favour you will be asking them is to fill out a paper-and-pen questionnaire that takes approximately five minutes to complete.*" The one-page questionnaire included items from the Big Five index—Appendix

A.9. Study 1 and 3 Questionnaire completed by helpers—(Goldberg, 1990). After looking over the questionnaire, participants reviewed a set of guidelines for requesting their favours (identical to those used by Flynn and Lake (2008); thus, their instructions are copied here):

First, they had to make the request of 10 different people in order to complete the task. Second, they could approach only strangers (i.e., they were not allowed to approach people they knew in any way). Third, participants had to adhere to a script when making their request. They could ask only, "Hello, I'm a student here. Will you please fill out this research questionnaire?" If pressed for details by the people they approached, participants were instructed to offer minimal information. Fourth, they were required to record the response ("yes - complied" or "no - refused") of every person they approached. After reviewing the materials, participants were asked to estimate the rate of compliance out of the 10 strangers they were required to approach[3] and also to complete the same measures administered in Study 2 regarding the assessment of helpers' perspectives in the helping situation (Appendix B.1. Study 2 Questionnaire).

Participants were given a clipboard, the questionnaires they would be asking other people to complete, and a tally sheet where they recorded compliance—*Agree to fill out a questionnaire? (Y/N)*—gender, and the verbal response of each person they approached. At that point, participants were released onto the campus and told to stay out of sight of one another. No more than five students were permitted to participate at a particular time, to avoid saturating the campus with people asking for identical favours. Upon returning to the laboratory with their

[3] Flynn and Lake (2008) only asked half of the participants to predict the compliance rate. They did not find any difference in the actual compliances rate between those who had predicted the rate before request and the other half who had not done so.

completed questionnaires, participants were asked to complete a demographic questionnaire, then were fully debriefed and compensated.

CMC Condition. Participants in the CMC condition followed a similar procedure with a few modifications. They were asked to send help-seeking emails (one at a time) using their own University of Waterloo (UW) email account with the subject line of "*Message from a fellow UW student*":

"Hello, I am a student at UW, and I got your email address from the UW directory. Will you please fill out this research questionnaire? There is a secure link to the questionnaire below. If you have any questions or concerns about this link, you can address them to msciexp@uwaterloo.ca

https://docs.google.com/forms/d/1pUHjeUCBqDyrmynWu7ZZ1w33x1G2d7cpa8ZQy-O2Cu0/viewform

Thanks."

After participants saw the online questionnaire and email message, they were asked to predict the rate of compliance. They were provided with 10 email addresses from the UW directory and asked to inform the experimenter if any of them looked familiar. Then they sent the help-seeking email messages. Afterwards, all participants completed a demographic questionnaire. Finally, they were fully debriefed and compensated.

Results

As predicted, a significant interaction was found between request media (CMC vs. FtF) and compliance rate (predicted vs. actual), $F(1, 44)= 121.10$, $p<.0001$, *partial eta squared*=.73 (Appendix C.1. Study 3 Repeated measure ANOVA). This interaction reveals that potential helpers who were asked FtF offered more help ($M= 7.15$, $SD= 1.81$) than their counterparts who

were asked over email (*M*= 0.21, *SD*=.54), *F*(1,44)= 260.78, *p*<.001, *d*= 5.20. Help-seekers' predictions of the number of individuals who would agree to help, however, were not significantly different between the two conditions (FtF: *M*= 5.11, *SD*= 2.23; CMC: *M*= 5.53, *SD*= 1.71), *F*(1, 44)= 0.47, *p*=0.50, *d*= 0.22.

FtF participants predicted that fewer people would say "yes" (*M*= 5.11, *SD*= 2.26) to their request than actually did (*M*=7.15, *SD*=1.81), *F*(1, 26) = 17.45, *p*<.0001, *d*=1.01. This effect, however, was reversed in the CMC condition. When participants asked for help over email, they predicted that *more* people would say "yes" (*M*= 5.53, *SD*= 1.71) to their request than actually did (*M*=0.21, *SD*=0.53), *F*(1,18)= 185.47, *p*<.0001, *d*= 4.20 (Figure 5).

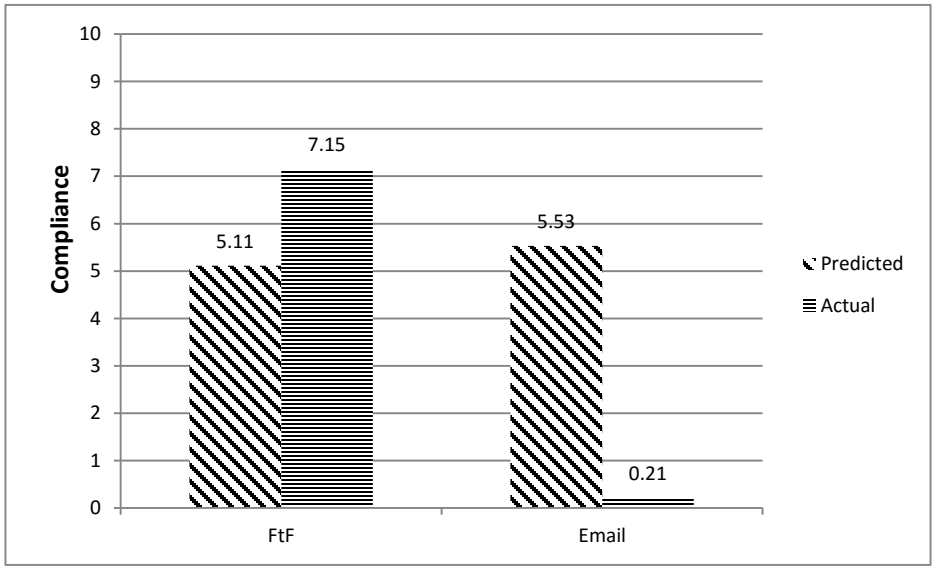

Figure 5 Study 3 Compliance (Predicted vs. Actual) by Media (Email vs. FtF)

I also had participants rate how difficult it would be and how guilty, awkward, and embarrassed they thought someone would feel for saying "no" to their requests for help. These items were averaged into a "Social force index" (alpha=.88). I found that participants indeed recognized that it would be more difficult for helpers to say "no" in-person (M=3.14, SD=1.08) than over email (M= 1.75, SD=.87), F(1, 44)= 21.44, p<.001, d=1.42 (Appendix

C.2. Study 3 Social index analysis), suggesting that inaccurate assumptions about the discomfort of saying "no" do not appear to be driving the inaccuracy of requesters' predictions of compliance. My original intention was to run a mediation analysis to further investigate whether "Social forces" contribute to help-seekers' predictions of compliance. The collected data in this study, however, does not satisfy the linearity assumption in current statistical tools such as PROCESS Macro; (Hayes, 2013), so the analysis was not conducted for this study.

Equation	R-Square	*p*	Constant	B1	B2
Linear	0.047	.138	4.32	.369	
Quadratic	.146	.028	7.43	-2.30	.47

Table 6 Study 3 Linearity test - Social forces vs. Predictions

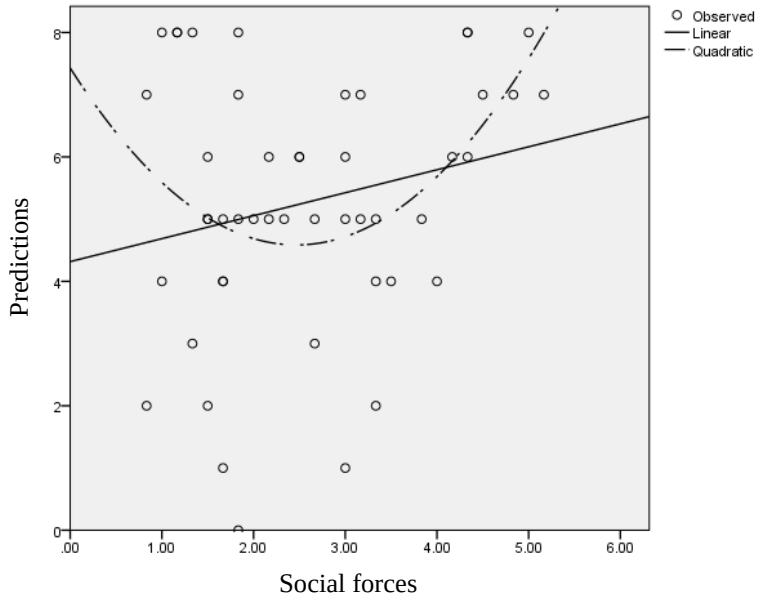

Figure 6 Study 3 Scatter plot - Social forces vs. Prediction

Discussion

I hypothesized that, due to insufficient adjustment in perspective-taking, help-seekers would underestimate the amount of help received in the FtF condition and overestimate the amount of help received in the CMC condition. In a live setting, these results confirm the

hypothesis and offer additional evidence that the help-seeking medium affects the persuasiveness of the request. Help-seekers, however, do not take this fact into account when estimating the likelihood of receiving help.

Notably, the Flynn and Lake (2008) effect did not simply disappear in the CMC condition; rather, it was significantly reversed. This replicates the findings from Flynn and Lake (2008) (Study 6) in which their effect was reversed when participants asked for help via flyers rather than FtF. The social cost of saying "no", however, does not explain this reversal since requesters were aware that the cost of saying "no" is significantly more in FtF interactions compared to CMC. To further explore this persistent pattern and the psychological explanation for it, I ran another study, described below.

Study 4 – Helpers' trust and empathy and help-seekers' perceptions

I hypothesized previously that help-seekers are attentive to helpers' feelings of empathy toward someone in need when being approached FtF. They might not be aware, however, that the initial interpersonal trust activates helpers' empathetic feelings and that helpers' trust is decreased when the communication channel shifts to CMC. Hence, help-seekers' expectation of receiving help may remain at the same level whether asking for help FtF or via CMC, even though actual levels of compliance vary enormously between the two media.

Methodology

A total of 478 University of Waterloo students participated in the study (60 requesters [36 female] and 418 targets). Sample size was determined by the sample size of Flynn and Lake (2008), again ensuring >80% power. Requesters were paid $10; targets were paid $1. In order to collect mechanism data from targets (both those who said "yes" and those who said "no" to

completing a free task, Appendix D.1. Study 4 and 5 Free task), requesters were instructed to ask seven[4] strangers who had already agreed to fill out the $1 questionnaire (Appendix

[4] UW ethics office was concerned it would take too long for requesters to find ten strangers to comply with their request. The office and I mutually agreed on seven.

D.2. Study 4 $1 Questionnaire) to complete an additional task for no pay (Appendix D.1. Study 4 and 5 Free task). As in Study 3, before making these requests, requesters predicted the number of people (out of seven who have already agreed to fill out the paid questionnaire) who would complete the free task. Requesters also answered the same set of questions (Appendix

D.2. Study 4 $1 Questionnaire). Requesters were provided with all of the details below before completing these measures.

FtF condition. Requesters approached as many strangers as necessary to recruit seven people to fill out a questionnaire for $1. To ensure that requesters were randomly approaching targets, which was necessarily true in the email condition, we added an additional requirement to the FtF-Stranger condition in this study: requesters counted five passersby and approached the sixth. When someone agreed to complete this paid questionnaire, requesters would immediately ask the target to complete an additional task for no additional pay using the following script:

"*Thanks for your participation. Actually, there is another 1-page editing task for which we don't have access to any funds. Unfortunately I can't pay you for it. I was wondering if you'd be willing to perform that before the paid questionnaire. It's totally up to you and you'll be paid for the other questionnaire regardless.*"

Email condition. Due to ethical concerns (i.e. email addresses in UW directory cannot be used for solicitation and those addresses cannot be shared with others), participants in this condition were provided with seven supposed UW email addresses to send requests to and were informed that the recipients had already registered in our participant pool. Actual email messages were sent one by one to 210 (30 requesters × 7 helper) university students who had previously registered to complete a questionnaire for $1 using a UW email address set up for the experiment (smcknigh@uwaterloo.ca). The email message was as follows:

"*Thanks for registering to our mailing list to participate in a study in exchange for $1. I'm a student at UW and am sending this email to share the link to the $1 study with you.*

Actually, before you proceed to the $1 study, there is another 1-page editing task for which we don't have access to any funds. Unfortunately, I can't pay you for it. I was wondering

if you'd be willing to perform that before the paid questionnaire. It's totally up to you and you'll be paid for the other questionnaire regardless."

Requesters were then provided with seven supposed UW email addresses and then they sent requesting emails one at a time using their own UW email addresses. Note that recipients were dummy UW students and none of these requests messaged were delivered to actual UW students.

After saying "yes" (and performing) or "no" to completing this unpaid editing task, all targets (potential helpers) completed the paid questionnaire, which consisted of a series of questions about why they had decided to say "yes" or "no" to completing the unpaid task. As part of this questionnaire, targets were asked to answer on a Likert scale of 1 to 7 the same five "discomfort saying 'no'" questions requesters answered in this study, specifically: "*How [awkward, guilty, uncomfortable, embarrassed] would you [someone] feel saying 'no' to the request to complete a task for free?*" (Appendix

D.2. Study 4 $1 Questionnaire). These questions were again averaged into a social index (alpha=.88, Appendix

D.4. Study 4 Indices reliability analysis).

Requesters and targets also answered a series of questions on 7-point Likert scales about the extent to which targets trusted [adapted from (McKnight, Choudhury, & Kacmar, 2002b)] and empathized [adapted from (Batson et al., 1983)] with the requesters (or the extent to which requesters imagined their targets would trust and empathize with them). Specifically, participants were asked how sympathetic, compassionate, and softhearted they felt towards the person who was asking them to complete the free task (or how sympathetic, compassionate, and softhearted they imagined the other person would feel towards them) (alpha=.92, Appendix

D.4. Study 4 Indices reliability analysis), and how well-meaning, honest, and likely to take advantage of them (reverse-scored) the other person seemed (or the other person would think they were) (alpha=.77, Appendix

D.4. Study 4 Indices reliability analysis).

Results

Two-hundred and ten emails were sent to targets that had previously registered in our participant pool. Not surprisingly, only 44 recipients filled out the paid questionnaire and they received $1 on their WatCards. To address this issue, similar to the bootstrap method, 30 samples of seven respondents were drawn (with replacement) out of the 44 responses and each was assigned to one requester in the email condition (i.e 30 requesters with seven helpers for each that is identical to FtF condition format).

As in Study 3, a significant interaction was found between the request condition (Medium: FtF vs. Email) and Compliance (Predicted vs. Actual), F (1,116)= 17.94, p<.0001, *partial eta squared*=.13 (Figure 7, Appendix

D.5. Study 4 ANOVAs). Once again, requesters in the FtF condition significantly underestimated the likelihood that targets would comply with their requests (Predicted Compliance: M=4.43, SD=1.70; Actual Compliance: M=5.43, SD=1.81; F(1, 58) = 4.87, p=0.03, d=.57), while requesters in the email condition overestimated the likelihood that targets would comply with their requests (Predicted Compliance: M=4.10, SD=2.01; Actual Compliance: M=2.43, SD=1.31; F (1, 58)= 14.55, p<.0001, d=.98). Also consistent with Study 3, there was no statistically significant difference between requesters' predictions of compliance in the FtF and email conditions, F(1, 58)= 0.48, p=0.49, d=.18, despite the fact that targets were once again much more likely to comply in the FtF condition than the email condition, F(1,58) = 54.10, p<.0001, d=1.90.

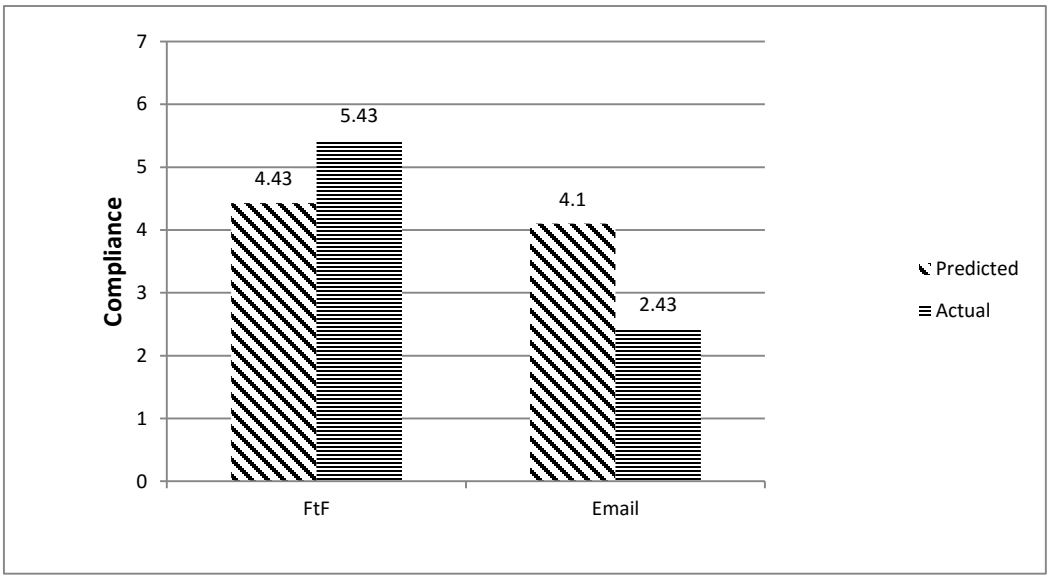

Figure 7 Study 4. Compliance (Predicted vs. Actual) by Media (Email vs. FtF)

I also conducted three separate 2(Request Medium: email, FtF) x 2(Perspective: requester, target) ANOVAs on each of the mechanism indices and found the following (Figure 8, Appendix

D.5. Study 4 ANOVAs): a significant interaction emerged for the Social force index, $F(1, 116)=5.41$, $p=.022$, *partial eta squared*=.045. As in Study 3, requesters recognized that targets would likely feel more uncomfortable saying "no" in person ($M=3.68$, $SD=1.23$) than over email ($M=2.48$, $SD=1.29$), $F(1, 58)=13.58$, $p=.001$, *partial eta squared* =.19. Targets confirmed this prediction, reporting that they would indeed feel more uncomfortable saying "no" to a request in person ($M=3.31$, $SD=.50$) than over email ($M=2.93$, $SD=.51$), $F(1, 58)=8.65$, $p=.005$, *partial eta squared=.13,* although the difference between the two conditions was actually less than requesters had expected. Altogether, this interaction failed to provide a compelling explanation for requesters' inaccurate predictions of compliance.

There was also a significant interaction on our trust index, $F(1, 116)= 8.92$, $p=.003$, *partial eta squared*=.071, which mirrored our compliance results; this is unlike the interaction we found on the Social force measure. Targets reported that they trusted requesters more in the FtF condition ($M=5.33$, $SD=.43$) than in the email condition ($M=4.04$, $SD=.79$), $F(1, 58)= 120.98$, $p<.001$, *partial eta squared* =.68. Requesters, however, reported no statistically significant difference between the two conditions, $F(1, 58)=2.36$, $p=.130$, *partial eta squared* =.04.

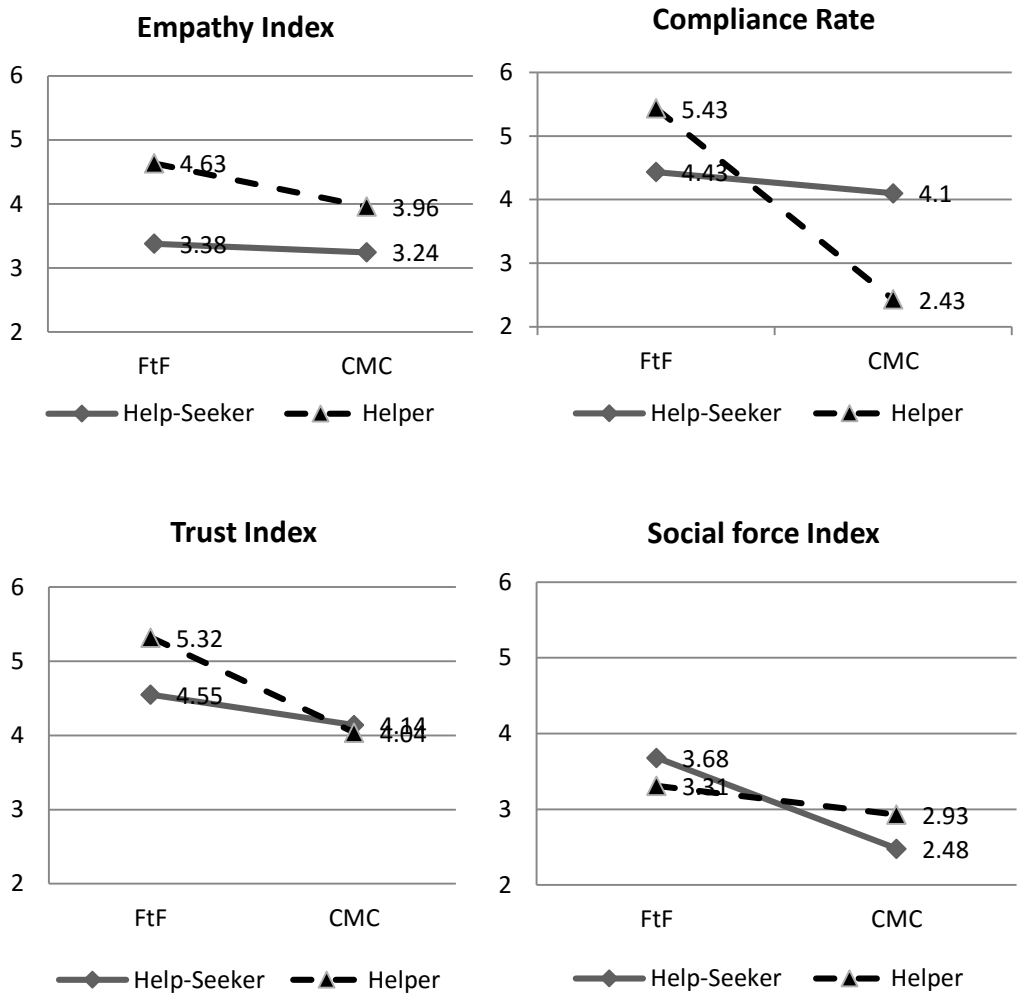

Figure 8 Study 4 Compliance rate vs. mechanism measures

A similar pattern of results for trust emerged for the empathy index, although the interaction was not statistically significant, $F(1, 116)=2.34$, $p=.129$, *partial eta squared*=.02. Targets reported that they felt more empathy towards requesters in the FtF condition ($M=4.63$, $SD=.56$) than the email condition ($M=3.96$, $SD=.46$), $F(1, 58)=25.90$, $p<.001$, *partial eta squared* =.39. Requesters, however, reported no statistically significant difference between the two conditions, $F(1, 58)=.17$, $p=.69$, *partial eta squared* =.003.

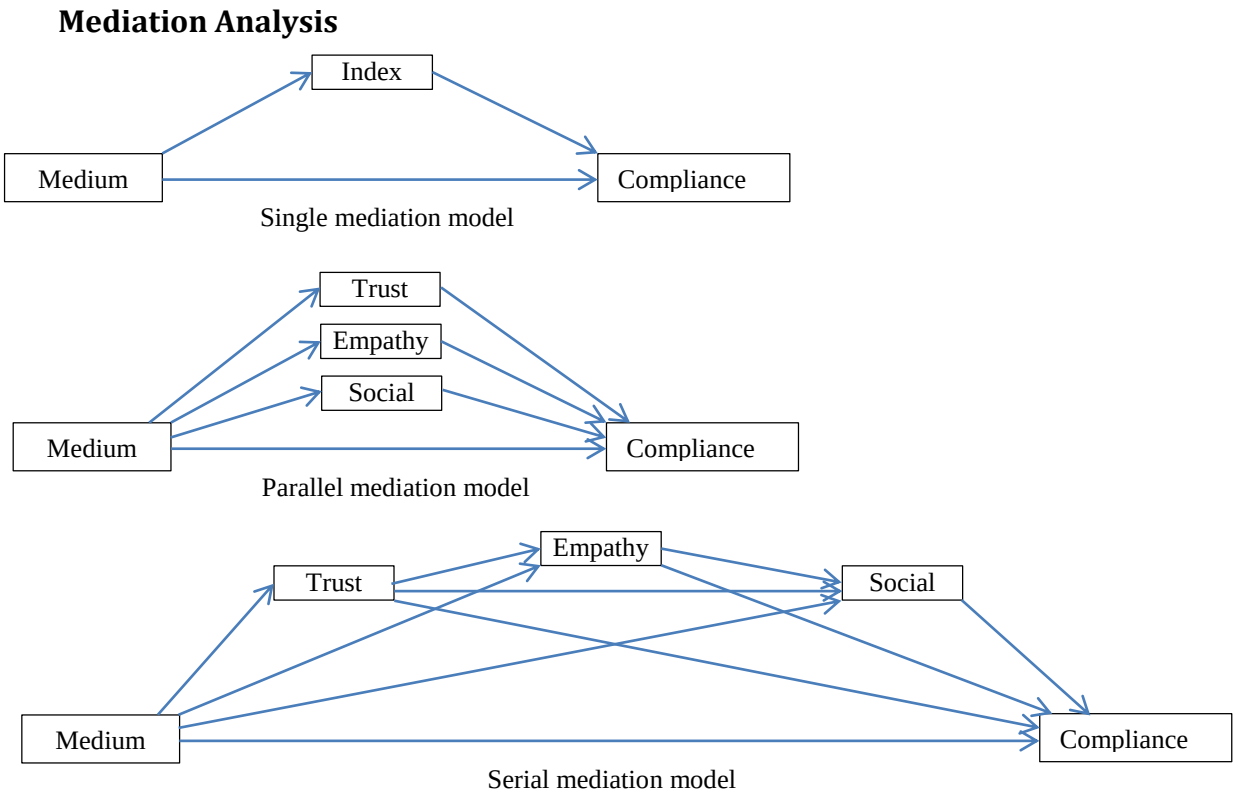

Figure 9 Study 4 Mediation analyses models

So far, the purpose of this study's data analysis was to compare requesters' and targets' compliance rates and experience of the request (either perceived or actual). Consequently, the data of both groups was merged and analyzed. In mediation analyses, however, the two data sets were separated, since the mechanisms of compliance are not necessarily the same across the two groups. For the same reason, I used the original data (without sampling with replacement in the CMC helper condition), 60 help-seekers (30 FtF and 30 CMC) and 254 helpers (210 FtF and 44 email), for mediation analysis purposes.

The mediation analyses were conducted (Appendix

D.6. Study 4 Mediation analysis) separately for requesters and targets in the PROCESS macro for SPSS (Hayes, 2013). For each analysis, I included the request condition (email, FtF) as the independent variable, the three mechanism indices (separately, together in parallel, and together in serial – Figure 9) as mediators, and compliance (predicted compliance for requesters, actual compliance for targets) as dependent variables. A serial mediation model allows us to test whether trust causes empathy, which in turn explains the difference in actual compliance between the CMC and FtF conditions, as previously theorized.

Analyses of mediators for helpers (the drivers of *actual* compliance):

Employing separate single mediation models revealed that both empathy (Index= -.193, 95% CI = [-.453, -.050]) and trust (Index= -.341, 95% CI = [-.755, -.030]), but not social forces (Index=.001, 95% CI = [-.073,.012]), mediated the differences in compliance between the FtF and email conditions. Only empathy remained significant, however, when trust and social forces were included in the parallel mediation model (Index= -.196, 95% CI = [-.497, -.033]). Further, when the proposed serial mediation model was used in PROCESS Macro, the only statistically significant path was the theorized path of request medium → trust → empathy → compliance (Index= -.186, 95% CI = [-.426, -.045]).

Analyses of mediators for requesters (the drivers of *predicted* compliance):

A single mediation model revealed that social forces mediated requesters' predictions of compliance (Index= -.570, 95% CI = [-1.216, -.138]); however, this effect dropped to non-significance (Index= -.422, 95% CI = [-1.111,.060]) once the parallel mediation model was used, including all three indices. Neither trust nor empathy mediated requesters' predictions of compliance when analyzed by single, parallel, or serial mediation models including all three possible mediators.

Discussion:

Altogether, these findings confirm previous literature suggesting a link between empathy and helping behaviour. Moreover, as hypothesized, empathetic feelings are activated by increased trust when a request is made in person rather than over email. This, at least in part, explains the greater effectiveness of FtF help-seeking as compared to email help-seeking. Requesters, however, seem oblivious to the role trust and empathy play in generating different response rates across these different media, which distorts their judgments of media effectiveness.

Study 5 – Closeness as a predictor of offering help

In the fifth study, I was interested to see the effect of relationship closeness on both media effectiveness and help-seekers' predictions of compliance in a helping situation. In the previous studies, although helpers and help-seekers were from the same community (e.g., UW students), help-seekers' predictions of compliance were significantly miscalculated. Two interactants in a helping situation, however, can be in any level of relationship from total strangers in different countries to siblings who live in the same house. It does not seem plausible to generalize our findings to all levels of closeness in the spectrum without further examination.

The literature discussed in Chapter 2 (i.e., Construal Level Theory and friends' reciprocity) predicts that friends will likely grant more help than strangers via both media. The two bodies of literature, however, (i.e. CLT vs. reciprocity and empathy among friends) make different predictions for how people are likely to make projections about the effectiveness of email for soliciting help from friends. The present study was designed to uncover and compare FtF and email persuasiveness among friends, as well as help-seekers' predictions of the two media's effectiveness when making requests of friends.

Methodology

Participants were invited to the lab in exchange for bonus marks. They were assigned to one of six conditions in a 3 (Closeness: Close friends, Acquaintances, Strangers) × 2 (Media: FtF vs. email) between-subjects design.

Close friends / Acquaintances / Strangers – FtF: Participants in these conditions learned that they had one week to ask five close friends, acquaintances, or strangers (depending on the randomly assigned condition) in person to help them with a task. To ensure that the requesters were randomly approaching targets, which was necessarily true in the email condition, we added an additional requirement to the FtF-Stranger condition in this study: requesters counted five passersby and approached the sixth. The task involved finding and correcting grammatical errors in a short passage (Appendix D.1. Study 4 and 5 Free task). Participants were instructed to use the following script:

"*I'm involved in a research project and need to collect some data. Will you do me a favour and perform a short task for me?*"

Participants were then asked to predict how many of those five individuals would perform the task. After making this prediction, they answered two sets of questions about potential helpers' experience of the task (*e.g., How awkward do you think [your acquaintances/your friends/people] would feel refusing your request?*) and their own experience of the task (*e.g. How awkward do you feel about asking [your acquaintances/your friends/people] to complete this task?*) (Appendix E.1. Study 5 Main questionnaire). Before leaving the lab, they answered a demographic questionnaire (Appendix

E.2. Study 5 Demographic questionnaire) and were advised to return the tally sheet as well as any completed and uncompleted tasks within the deadline (one week after completing the lab portion of the study) to my office.

Close friends / Acquaintances / Strangers – CMC: Participants in these conditions did the same task, which was to ask five close friends / acquaintances / strangers to edit a passage, with one change. They asked potential helpers via email rather than FtF. They logged onto their UW email account and sent the message below to five friends / acquaintances / strangers, one at a time:

Subject line: "*Data collection*"

"*Recently I'm involved in a research project and need to collect some data. Can you please copy the passage below in a Notepad file, perform the task and return the file to me?*"

Then they predicted the rate of compliance and answered the same sets of questions as the FtF participants (Appendix E.1. Study 5 Main questionnaire and Appendix

E.2. Study 5 Demographic questionnaire). They were advised to report the number of people who actually complied (out of 5) through a Qualtrics link within the deadline (one week after completing the lab portion of the task) and send the completed task(s) to an email address set up for the experiment. Please note that due to ethical concerns explained in Study 4, participants in the Stranger condition were provided with five dummy UW email addresses. I sent the message described above, using the experiment's UW email address, on behalf of participants to registered recipients from Study 4 who had not ultimately participated in that study. Those who performed the editing task received $1 on their WatCard.

Results

One hundred and eighty (67 females) participated in the study and were randomly assigned to 6 (2 media × 3 closeness level) conditions. The number of participants was again based on Flynn and Lake (2008). All of the participants were asked to return the results within a week of the lab portion of the study. Table 7 shows the numbers of missing reports (i.e., first-tier participants who failed to report within the deadline) in each condition. The missing values were substituted with the Mean of the corresponding condition.

	Close friends	Acquaintances	Strangers
FtF	2	3	3
CMC	0	1	N/A

Table 7 Study 5 Missing results in each condition

The mean Compliance Rates (Close Friends vs. Acquaintances vs. Strangers × Predicted vs. Actual) are shown in Figure 10. As observed in the previous studies, and in accordance with CLT, a significant interaction effect between Compliance (predicted vs. actual) and Media (FtF vs. CMC) emerged in all Closeness levels (Close Friends, $p<.001$, *Partial Eta Squared*=.21; Acquaintance, $p<.001$, *Partial Eta Squared*=.23; Stranger, $p<.001$, *Partial Eta Squared*=.37).

Again as predicted by CLT, this interaction was particularly strong in the Stranger condition

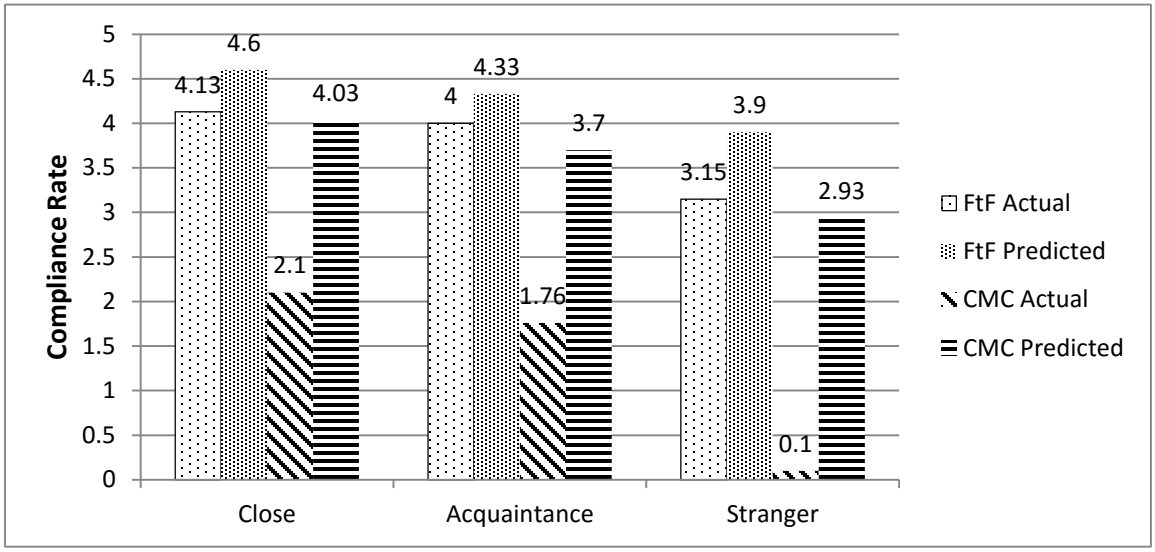

Figure 10 Study 5 Compliance (Predicted vs. Actual) by Media (Email vs. FtF) - across closeness conditions

(Appendix E.3. Study 5 ANOVAs). These results suggest that overestimating email effectiveness compared to FtFC is a common error, even if requesters and targets are close friends.

Dependent Variable	Compared Groups		*Sig.* (CMC)	*Sig.* (FtF)
	Close	Acquaintance	.483	.929

Actual Compliance Rate	Strange	Close	<.0001	.021
		Acquaintance	<.0001	.052
Predicted Compliance Rate	Close	Acquaintance	.615	.665
	Strange	Close	.007	.066
		Acquaintance	.085	.344
Prediction Error[5] (between-subject)	Close	Acquaintance	1.000	.934
	Strange	Close	.041	.754
		Acquaintance	.044	.536
Compliance (within-subject)	Close	Acquaintance	.432	.747
	Strange	Close	<.0001	.008
		Acquaintance	<.0001	.055

Further, in all closeness levels the actual compliance rate in the FtF condition was significantly higher than the actual compliance rate in the CMC condition (p<.001 in all cases), which also confirms the CLT prediction. In terms of the predicted rate of compliance, only participants in the Stranger condition predicted significantly more compliance in the FtF condition than their counterparts in CMC (M_{FtF} = 3.90, SD= 1.18 M_{CMC} = 2.93, SD= 1.36; F (1, 58)= 8.52, p=.005. The other two closeness groups' compliance rate predictions (CMC vs. FtF) were not significantly different (Close: M_{FtF} = 4.60, SD= 1.30, M_{CMC} = 4.03, SD= 1.22 F (1, 59)= 3.03, p=.09; Acquaintance: M_{FtF} = 4.33, SD= 1.09 M_{CMC} = 3.70, SD= 1.51 F (1, 59)= 3.45, p=.07). The Tukey HSD tests results for Mean comparisons within Closeness conditions are shown in Table 8.

The first row of Table 8 (Actual Compliance Rate) shows the actual compliance rate of close friends is higher than strangers' both in FtF) (M_{close} = 4.13, SD= 1.41, $M_{Strange}$ = 3.15, SD= 1.33, p <.0001) and email (M_{close} = 2.10, SD= 1.29, $M_{Strange}$ = 0.10, SD= 0.31, p=.021).

[5] Prediction Error= Actual Compliance - Predicted Compliance. Please note that the significance levels of "Prediction Error" in Table 8 were calculated by a between-subject, as opposed to within-subject (Predicted vs. Actual), ANOVA that was employed in the omnibus analysis and showed for "Compliance Rate" in Table 8.

Table 8 Study 5 Tukey HSD Mean comparisons across conditions

To explore any difference across closeness conditions, the data was submitted to a 2 (Medium: FtF vs. CMC) x 3 (Helper Closeness: Close Friend vs. Acquaintance vs. Stranger) × 2 (Compliance Rate: Actual vs. Predicted) ANOVA with repeated measure on the last factor (Appendix E.3. Study 5 ANOVAs).

No second level interaction emerged confirming that friends' pattern of behaviour does not differ from strangers'. A significant interaction was found between Compliance Rate and Medium, indicating that FtF help-seekers did a better job predicting compliance (M_{Actual}= 3.76, *SD*= 1.47 vs. $M_{predicted}$= 4.28, *SD*= 1.22) than their counterparts in the CMC conditions (M_{Actual}= 1.33, *SD*= 1.43 vs. $M_{predicted}$= 3.56, *SD*= 1.43; $F(1, 173)= 63.1$, $p<.001$, *Partial Eta Squared*= 0.27). Interestingly, this is also aligned with the CLT prediction (i.e., more psychological distance and subsequently more egocentrism and prediction error in mediated communication).

Another finding that accords with CLT is a significant interaction that emerged between Compliance Rate and Closeness, showing the effect of ongoing relationships on compliance prediction errors $F(2, 173)= 3.63$, $p=.028$, *Partial Eta Squared*= 0.04. Post-Hoc Tukey HSD tests were conducted to examine this interaction and they showed that the Acquaintance group (FtF and CMC participants collapsed within each closeness level) did not differ significantly from the Close Friend group in predicting compliance (*Mean Difference* $_{within\text{-}subjects}$ = -.27, *SE*=.19, $p=.35$, but the Stranger group did much worse than the Close Friend (*Mean Difference* $_{within\text{-}subjects}$ = -1.18, *SE*=.19, $p<.001$) and Acquaintance groups (*Mean Difference* $_{within\text{-}subjects}$ = -.91, *SE*=.19, $p<.001$).

Mechanism data

As mentioned earlier, I asked requesters to report how they would feel (i.e. *Easy, Embarrassed, and Awkward*) about making requests of others either FtF or via email. Each of the

mentioned measures was separately submitted to a 2 (Medium: FtF vs. CMC) × 3 (Helper Closeness: Close Friend vs. Acquaintance vs. Stranger) ANOVA (Appendix

E.4. Study 5 Feeling about making request - ANOVAs). Similar to Study 1, a marginally significant main effect of medium emerged for Embarrassment (F (1, 173)= 3.49, p=.063), where requesters reported that they would feel more embarrassed asking FtF (M= 3.11, SD= 1.76) than via email (M= 2.62, SD= 1.75). Closeness showed main effects both for the Easy (F (2, 173)= 4.28, p=.015) and Awkwardness (F(2,173)=9.07, p<.001) feelings. Participants felt more comfortable asking close friends (M= 4.97, SD= 1.63) than strangers (M= 4.10, SD= 1.63, p=.014). Participants reported that they felt less awkward asking close friends (M= 2.90, SD= 1.97) than both acquaintances (M= 4.00, SD= 1.977, p=.006) and strangers (M= 4.34, SD= 1.81, p<001); however, they felt equally comfortable asking strangers and acquaintances (p= 0.6). Together with my results in Study 1, these findings suggest that people might prefer to make requests of acquaintances via email instead of FtF if they are given the option. No interaction emerged in the omnibus analysis.

Mediation analysis

I found that people's ability to accurately predict compliance depended on their level of closeness to the people they asked. Specifically, participants who asked close friends and acquaintances were more accurate than those who asked strangers (Table 8). This leads one to think that these groups may be estimating compliance in different ways. Hence, I examined the mechanisms underlying help-seekers' predictions, using a moderated mediation model as shown in Figure 11. The data was submitted to PROCESS macro in SPSS (Hayes, 2013) in which the three possible mechanisms were considered in parallel. The only significant moderated mediator was empathy (Index= -.124, (95% CI = [-.330,-.0055]). This means help-seekers in at least one

of the closeness groups considered the empathetic feelings of helpers significantly more than help-seekers in the other groups (Appendix

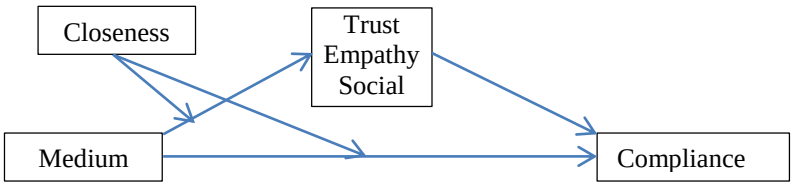

Figure 11 Study 5 Model of moderated mediation analysis

E.5. Study 5 Moderation and mediation analysis).

To investigate this interaction, a parallel mediation model (Figure 9, P. 54) was used to test the mediation effect of the indices within each closeness group on compliance rate predictions. None of the indices were significant mediators of help-seekers' predictions of compliance in either the Stranger or Close Friends groups; however, the empathetic feelings of potential helpers were considered by participants asking Acquaintances (Index= -.366, (95% CI = [-.817, -.095]).

As demonstrated in Study 4, a stranger's decision to offer help is built on the trust → empathy link, which requesters do not fully appreciate. In this study, I found that requesters who are asking acquaintances, as opposed to strangers or close friends, do consider the targets' empathetic feelings. I further investigated whether requesters who asked acquaintances would take an even more complicated perspective and consider trust as the activator of the empathetic feelings. I used a serial mediation model (Figure 9, Page: 54) to test each of the closeness groups separately. As expected, the requesters who asked acquaintances did consider the link between trust and empathy (Index= -.086, (95% CI = [-.353, -.002]). Requesters who asked close friends and strangers, however, did not.

Discussion

One major difference between this study and the previous ones is the overestimation of compliance rates by stranger requesters. In my previous studies here (Studies 3 and 4), and many other similar studies, this effect was consistently observed (Bohns, 2016; Bohns et al., 2014; Flynn & Lake, 2008; Newark et al., 2014). The only dissimilarity between this procedure and the previous ones was that the requesters were required to perform the task and report the results within one week rather than immediately. This alteration was made because, most probably,

many participants would not be able to find five close friends or acquaintances on campus immediately. Nevertheless, this may have affected our results.

CLT posits that people pay less attention to contextual details when they are psychologically (e.g., temporally) far from an event. The theory generally predicts that people think more optimistically about their actions in the future than what they do about an immediate task: "… temporal distance typically increases positivity (people are more positive about the more distant future)" (Trope & Liberman, 2010, p. 444). Having said that, there is no reason to prevent one from comparing dependent variables across conditions, since the participants in all conditions were consistently exposed to this effect.

The results showed that FtF help-seeking is more effective than email, regardless of the level of acquaintanceship between helpers and help-seekers; however, neither close friends nor acquaintances acknowledge this difference. Instead, both predict the same rate of compliance in FtF and email requests. This means both groups overestimate the effectiveness of email help-seeking. Furthermore, as soon as a minimal level of relationship is established, helpers' incentives stay the same regardless of being asked (FtF or via email) by a close friend or an acquaintance. A key difference that I identified, however, is that between acquaintances or close friends and strangers, strangers were far less likely to agree to help than someone with whom the help-seeker had a relationship.

Furthermore, as found in Study 4, participants making requests of strangers once again did not seem to take the potential helpers' experience of empathy, trust, or awkwardness into account when predicting compliance rates. Interestingly, help-seekers who asked close friends did not take these considerations into account either. A surprising finding, however, was that requesters who asked acquaintances did seem to recognize the link between trust and empathy

and its effect on compliance. One possible explanation is the moderate psychological distance between acquaintance requesters and targets. The distance is not enough to make them completely unaware of their targets' experiences and perspectives and, at the same time, it is not too small to let them take the existence of trust and empathy for granted as may be the case for close friends.

Ch. 5 – General Discussion

Summary of findings

Requesting help involves risky decision-making with one rewarding outcome (i.e., receiving help) and a number of costly outcomes, such as conveying an incompetent image to potential helpers and, in the case of rejection, feeling embarrassed, and not receiving needed help. Consequently, asking for help requires some courage. It also makes sense that someone would want to have a relatively accurate assessment of the probability of receiving help before asking for it (Flynn & Lake, 2008). An easy way to avoid the more costly outcomes is to ask for help indirectly via email. But do help-seekers know the chances of receiving help when requesting it via email instead of face-to-face? This is the question I have sought to answer in these five studies.

In my first study, I found that a substantial percentage of requesters preferred email as the medium to contact potential helpers, despite being rewarded for the effectiveness of their help-seeking efforts. Neither participants who chose to seek help FtF nor those who chose to do so via email were able to differentiate between potential helpers' motives when being asked FtF vs. via email, which offers preliminary confirmation for 28H2. These findings are consistent with the theory of impression management in media selection (i.e., people are likely to refrain from making a request in person to avoid an awkward interaction regardless of the effectiveness of the substituted medium). Interestingly, my next four studies confirmed help-seekers' ignorance of the ineffectiveness of email as a request medium, which likely makes email an even more attractive medium through which to make requests.

Using three hypothetical helping scenarios in my second study, I examined helping situations both from helpers' and help-seekers' perspectives and found that potential helpers said

they would be more likely to offer help FtF than via CMC (confirming H1); however, potential help-seekers did not see a difference between these two media (H2). These results offer some evidence indicating the ineffectiveness of help-seeking via CMC and help-seekers' naiveté about this fact. This study, however, relied solely on hypothetical scenarios.

The third study was designed to replicate these results using actual help requests. Participants were required to ask for help either FtF or via email. Before doing so, they were asked to predict the rate of compliance, i.e., the number of people who would agree to complete a questionnaire. I compared the actual rate of compliance to the predicted rate in each condition. These data confirmed the results of the second study, namely, that helpers are more willing to help in FtFCs than CMC (H1) and help-seekers fail to acknowledge this difference in their predictions (H2). More interestingly, help-seekers predicted they would receive less help than they actually did in FtF requests and expected to receive more help in CMC than they actually did (H3). In fact, help-seekers' predictions of the amount of help offered were not different across the two conditions (H2). These results confirmed that (a) CMC is not as effective as FtFC as a medium of persuasion and (b) help-seekers egocentrically ignore this fact. Thus, as observed in my first study, help-seekers might thoughtlessly choose CMC over FtFC without attending to the reduced chances of receiving help.

An interesting and unexpected finding in the third study was the fact that the help-seekers predicted no difference between the likelihood of receiving help via email than FtF. The fourth study was conducted to identify the psychological mechanism that could explain this pattern. In this study, I explored the possibility that help-seekers egocentrically assume that trust and empathetic emotions experienced by potential helpers are at the same level in CMC and FtFC. In a live help-seeking situation, participants were assigned to the role of help-seekers asking

strangers to perform a free task either via email or FtF. As in Study 3, participants were asked to predict the rate of compliance in each condition, as well as how trustworthy potential helpers would find the help-seeker, the extent to which they would empathize with the help-seeker, and the social forces they were likely to experience in each condition. The same data was collected from potential helpers who either accepted or rejected the request to perform the free task. Once again, help-seekers failed to predict the difference in compliance between CMC and FtF (H2), despite a large difference between the two on actual compliance (H1). Analyses of the various proposed mechanisms indicated that empathetic feelings activated by trust motivate potential helpers to grant more help FtF than over email (H5). Help-seekers' predictions of compliance, however, were not derived by any of the above helping motives (H6). As expected, help-seekers predicted the same level of trust and empathy in FtF and email requests, while helpers reported more trust and empathy in FtFC compared to email communication (H4).

In my fifth and final study, I explored the effect of relationship closeness on both media effectiveness and prediction accuracy. I used the same procedure as in my third study, but at three different levels of closeness: strangers, acquaintances, and close friends. Notably, making a request via email was generally less effective than making a request FtF, even among close friends (H7a), suggesting that FtF is the best way to seek help regardless of the degree of closeness between communicants. Not surprisingly, the compliance rates for strangers, both over email and FtF, were significantly lower than those of close friends and acquaintances. No differences in actual compliance rate were found between these two latter groups. In terms of prediction accuracy, again no difference was found between close friends and acquaintances, either in the FtF or email conditions. Both of these two groups, however, were significantly better at predicting compliance than strangers. Furthermore, all groups, including close friends,

were much better at predicting compliance FtF than over email (H7a), indicating that the wide effect of egocentrism in CMC persists regardless of closeness level. H7b was not confirmed in any of the outcomes indicating that the CLT prediction is more accurate for mediated help-seeking (H7a).

These findings are different from previous work in the CMC literature in various ways. First, other than one exception mentioned in the literature review (Wilson, 2003), no one has looked at message senders' predictions of their own effectiveness. I found that message senders significantly overestimate their effectiveness in CMC, and this may adversely affect their media selection decision. Second, I looked at the effect of closeness on the aforementioned prediction error as well as the actual channel effectiveness. Surprisingly, I found that friends show the same pattern of error. That is, they overestimate their effectiveness in CMC and interestingly, similar to strangers, they are significantly less effective in email communication compared to FtFC.

Practical contributions

Overall, I found that people are less influential than they think over email. Although requesters *underestimated* the likelihood that people would comply with their requests in person, they *overestimated* the likelihood that people would comply with their requests over email. These findings appear to be the result of requesters' failure to appreciate the implicit trust that is conveyed in an FtF interaction and lost over email, which activates the targets' empathy towards the requesters.

Notably, these effects were quite large. In one study, potential helpers were 34 times more likely to comply with a request in person than via email, yet the people making these requests saw no difference when predicting the effectiveness of sending an email to approaching someone FtF. My studies show that even close friends do not realize how much more effective

making a request FtF is than by email because they do not take into account the extent to which CMC decreases potential helpers' incentives to comply.

The important practical implications of these findings are clear. It is often more convenient and comfortable to make requests by email than in person. If in addition to email's conveniences, people also overestimate its effectiveness, they may regularly choose less effective means of influence without fully recognizing the disadvantages (Roghanizad & Bohns, 2016). Ultimately, this mistaken belief may cause people to fire off an email rather than walk down the hall to ask for a favour, and this may ultimately result in less help being given and received overall.

Theoretical contributions

The effectiveness of CMC in persuasion has been well studied. It has previously been established that email is inferior to FtFC in many respects, most of which are caused by the filtration of nonverbal and social cues. The present research is distinguished from past studies because rather than exploring the inherent limitations of CMC, I have explored communicators' perceptions of this medium—in particular, their ability to assess the quality and effectiveness of their own communication attempts.

These findings present an important moderator of the established finding that people tend to underestimate the likelihood that others will comply with their direct requests (Bohns et al., 2011; Bohns et al., 2014; Flynn & Lake, 2008; Newark et al., 2014). In fact, the current findings are the complete opposite of this highly robust FtF phenomenon: people are actually *over*confident in their ability to get others to comply with their requests over email. Given the prevalence of email communication, this is an extraordinarily important moderator of this effect.

My research also contributes a new exploration of the role of relationship closeness in the underestimation-of-compliance effect. Despite a rich literature illustrating a link between friendship and responsiveness (Foot et al., 1977; Newcomb & Brady, 1982; Newcomb et al., 1979), as noted by Bohns (2016), most studies on the underestimation-of-compliance effect have been conducted between strangers. Yet in everyday life—including organizational contexts—we most often ask for help from people we know. In my studies, the essential role of communication media in persuasiveness was confirmed among friends and acquaintances, in addition to strangers. Like strangers, friends and acquaintances did not distinguish between the compliance rates in FtFC and CMC, despite the fact that actual compliance rates were different.

The current work also contributes a new perspective to a growing body of literature on trust in online and computer-mediated interactions (John, Acquisti, & Loewenstein, 2011; Roghanizad & Neufeld, 2015). Rather than focusing on users' willingness to trust online communications, the current work has implications for how the *creators* of online and computer-mediated content are likely to view the trustworthiness of their content.

A successful website persuades visitors to trust the e-vendor and put themselves in a vulnerable situation by sharing their sensitive information. Designers of such websites are also subject to egocentrism when predicting the persuasiveness of their artifacts. Indeed, their psychological distance from visitors involves all the dimensions known in the literature, i.e., social, temporal, spatial, and hypothetical distances. Hence, they are prone to egocentrism when taking visitors' perspectives about the effectiveness of their designs. This overconfidence actually was shown in similar domains, such as industrial design (Zhang, 2015) and spreadsheet development (Panko, 2007). Also in the electronic commerce domain, the main stream of researchers and many website designers believe that online visitors follow their deliberative

thinking (attending third party seals, reading privacy policy and third party policy, etc.) to build initial trust (McKnight, Choudhury, & Kacmar, 2002a; Palmer, Bailey, & Faraj, 2000; Spiekermann, Grossklags, & Berendt, 2001), but recent studies indicate the crucial role of intuition in the formation of online trust (Roghanizad & Neufeld, 2015).

Limitations and future directions

One of the interesting implications of these findings concerns organizational communication and the possibility that people regularly engage in ineffective help-seeking and consequently fail to receive the help needed. Thus, a limitation of the current studies is that they were conducted primarily on a student population. Although my initial research question was not limited to organizational communication, it is reasonable to predict that professionals would be more accurate in their predictions of others' compliance, particularly in formal communication. For these reasons, it may have made more sense to recruit a broader demographic of participants. There are, however, a few points that should be considered about participant recruitment. Professionals in organizations may have a biased perception in favour of email's effectiveness. Formal settings in organizations encourage employees to keep records and to document their communications for future reference and follow-up. In fact, if the request directly relates to an employee's *formal* job, email may be more effective than FtFC. Another factor that may inflate the effectiveness of email messages in organizational settings is strategic compliance. When an employee receives an email request from a colleague, s/he may comply, not necessarily because of that message's persuasiveness, but for a possible future need that may be satisfied by that colleague (i.e. reciprocity).

The above-mentioned factors may confound professionals' predictions of email effectiveness in organizational settings. Nevertheless, when sending an *informal* request (e.g.

knowledge seeking), which is the focus of this research, message senders – even professionals – may fail to adjust their biased intuition about email effectiveness.

Additionally, research shows that errors in judgment are not solely related to requesters' inexperience. It has been shown that people fail to draw from their prior experiences when making judgments about what other people are likely to do. Instead, they anchor on their own immediate perspective (and the fact that they know they are trustworthy and sympathetic) and fail to recognize the fact that to the recipient of their emails, they are just another suspicious email. Indeed, Flynn and Lake (2008) conducted a very interesting field study to check the generalizability of their in-lab results and found that even older adults who are well experienced in asking people for donations underestimated their own effectiveness in FtF requests.
Another limitation worth considering concerns the specific types of requests I used in these studies (e.g. filling out a one-page questionnaire, proofreading a half-page passage). Due to the nature of these requests, it is unclear whether these findings would generalize to larger, more complicated requests. Despite this limitation, these requests were chosen for the following strengths: (1) It was conceivable for requesters to ask strangers on campus for these kind favours. (2) These requests have very little benefit for helpers and a helper's compliance heavily relies on channel persuasiveness. (3) They are one-time helping sessions and communicants do not expect to meet in the future. This rules out any strategic thinking by helpers. (4) Filling out a questionnaire or proofreading a passage require the same amount of time and effort on paper (FtF) and electronically (over email). While taking these considerations into account, future research should explore the generalizability of my findings to other types of requests.

Another possible avenue for future work is exploring the underlying mechanisms that lead close friends and acquaintances to overestimate compliance over email. In the current

studies, I found that help-seekers underestimated the role of trust in FtF interactions, which plays an essential role in activating empathy and, consequently, motivating a stranger to grant help. This same level of trust is typically not evoked in CMC between strangers. Despite the fact that the same general pattern of results (i.e., overestimating compliance in CMC) was observed among friends, an overestimation of perceived trustworthiness cannot explain this effect, since trust between friends is already established. Thus, there must be another mechanism that explains these findings. Future research could uncover this mechanism.

Similarly, future research could further explore the mechanisms that drive help-seekers' predictions of compliance for strangers vs. friends and acquaintances. Despite the fact that close friends were expected to be more responsive to email requests than acquaintances, the observed response rates were not actually different. Furthermore, help-seekers based their predictions of compliance on different reasons for acquaintances (the trust → empathy link was considered) than for close friends (none of the hypothesized helping motives were considered). There is still much to investigate about how closeness affects predictions of compliance in these findings.

Conclusion

Previous research has identified a robust prediction error: help-seekers making requests FtF tend to underestimate the likelihood that potential helpers will agree to their requests. The current research aimed to explore what happens to this prediction error when a request is made via CMC. I found that this effect reverses when help-seekers make requests over email. That is, help-seekers overestimate the likelihood that potential helpers will comply with requests made over email. These findings suggest that people may regularly choose to use non-optimal means for help-seeking, preferring to take advantage of the conveniences of email without fully recognizing its disadvantages.

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Appendices

Appendix A Study 1 Supporting materials and SPSS output

A.1. Study 1 Instructions and main questionnaires

Thanks again for participating in our study. Please make sure that you have read and signed the consent form.

In this study, you can earn **up to 5 additional dollars** on top of your $5 participation payment by getting up to 10 other students to fill out a brief (1-page) questionnaire. These students must be strangers, not people you know in any way. For each person who agrees to fill out a questionnaire, you will receive $.50. For example, if all 10 people agree to complete the questionnaire, you will receive $5 additional dollars for a total of $10. If 5 people agree to complete the questionnaire, you will receive $2.50 additional dollars for a total of $7.5. If no one agrees to complete the questionnaire, you will receive $0 additional dollars for a total of $5.

You have two options for recruiting participants to fill out questionnaires: (1) Face-to-Face or (2) Email. You will either send 10 emails to students you don't know (we will provide you with 10 random UW email addresses) OR you will go out onto campus and ask 10 random strangers in person to fill out a questionnaire.

On the pages that follow, you will find two sets of instructions for your review. One set of instructions describes the Face-to-Face version of the task, and the other set of instructions describes the Email version of the task. You will also find the questionnaire that you will be asking students to complete (this questionnaire is the same in both conditions; however, in one condition it is online and in the other it is on paper). After reviewing both sets of instructions and the questionnaire, you will be given the option of completing the task either Face-to-Face or over email.

Please proceed to review the instructions for each option.

Face-to-face instructions

Please follow the instructions <u>carefully</u>

In this option, you will ask 10 strangers (in person) to fill out a questionnaire that takes approximately 5 minutes to complete. You can find copies of the questionnaire on your desk. Please take a quick look at the questionnaire then proceed to the next step.

1- **Main Task:** The researcher will provide you with a clipboard, a copy of below instructions, 10 copies of the questionnaire, and a pen. You will then be asked to leave the building and go out to specified indoor places at the University of Waterloo campus to request 10 strangers to fill out the questionnaire. It is VERY IMPORTANT that you follow the following guidelines in making this request:

   A. You may only approach STRANGERS, not friends, acquaintances, or people you know in any way.

   B. You must make your request using the following script:

"Hello, I'm a student here. Will you please fill out this research questionnaire?"

Please DO NOT alter this script in any way.

   C. After you have approached the 10th person (regardless of how many people have agreed to the request) you will return the completed questionnaires to lab. **You will be paid $0.50 for each completed questionnaire, so make sure to return them to the lab.**

2- After you return to the lab you will be paid according to the following equation: Total payment = $5 + ($0.5 x number of completed questionnaires), debriefed and excused.

Email instructions

Please follow the instructions <u>carefully</u>

In this option, you will send emails to 10 strangers asking to fill out an online questionnaire that takes approximately 5 minutes to complete. You can find a copy of the questionnaire by following this link, https:// link to the big five questionnaire.

Please take a quick look at the questionnaire then proceed to the next step.

1. **Main task**: Please sign in to your UWaterloo mail account and ask the researcher to give you a list of 10 email addresses. You may send the email messages only to STRANGERS, not friends, acquaintances, or people you know in any way. If any of the email addresses looks familiar inform the experimenter immediately. It is VERY IMPORTANT that you follow the following guidelines in making this request:
   A. You are asked to send emails to the recipients in your list one at a time.
   B. You must make your request using the following script:

Subject: "I'm a student here"

"Hello, I am a student at UW, and I got your email address from the UW directory.

Will you please fill out this research questionnaire? There is a secure link to the questionnaire below. If you have any questions or concerns about this link, you can address them to mmroghan@uwaterloo.ca
https://www. Link to questionnaire (When ready ask the experimenter and he will share your exclusive questionnaire link.)
Please DO NOT alter this script in any way.

C.

2. After you send all the emails you will be paid $5, debriefed and excused. You will receive your additional payment (equivalent to $0.5 x number of completed questionnaires) via your Watcard within 4 days. This will allow us to calculate the number of questionnaires that were completed

"Main questionnaire" (on Qualtrics)

Now that you have read about your task, please indicate which of the two tasks you would prefer to do:

_____Face to Face

_____Email

Now please answer the following questions about the options you were given and the choice you just made:

A. How much money do you think you will earn/would have earned if you were to do the email task (recall that you would receive $.50 per response)? _____

B. How much money do you think you will earn/would have earned if you were to do the Face-to-Face task (recall that you would receive $.50 per response)?_____

C. In the space below, please explain why you chose the option you chose (Face-to-Face or Email). What concerns or aspirations factored into your decision?

A.2. Study 1 Questionnaire 1

Please use the scale provided below to answer the following questions. These questions refer to the choice you made above to complete this task either face-to-face or via email.

Not at all 1--------2---------3----------4----------5----------6---------7 To a great extent

To what extent was your choice based on the following factors?

1. The method I chose is less effortful than the other method.
2. The method I chose is less time consuming than the other method.
3. The method I chose is less embarrassing than the other method.
4. The method I chose is less awkward than the other method.
5. The method I chose is more convenient than the other method.
6. The method I chose is more comfortable than the other method.
7. The method I chose is more effective than the other method.
8. I made my choice based on how quickly I will receive my additional payment.

I made my choice based on how much money I expect to earn in total.

A.3. Study 1 Questionnaire 2

Please answer the following questions on a scale of 1 to 7.

Not at all 1--------2---------3----------4----------5----------6---------7 To a great extent

1. How easy do you think it would be for people to refuse your request if you asked face-to-face?
2. How easy do you think it would be for people to refuse your request if you asked over email?
3. How awkward do you think people would feel refusing your request face-to-face?
4. How awkward do you think people would feel refusing your request via email?
5. How guilty do you think people would feel refusing your request face-to-face?
6. How guilty do you think people would feel refusing your request via email?
7. How uncomfortable do you think people would feel refusing your request face-to-face?
8. How uncomfortable do you think people would feel refusing your request via email?
9. How embarrassed do you think people would feel refusing your request face-to-face?
10. How embarrassed do you think people would feel refusing your request via email?
11. How sympathetic would people feel towards you if you ask face-to-face?
12. How sympathetic would people feel towards you if you ask over email?
13. How compassionate would people feel towards you if you ask face-to-face?
14. How compassionate would people feel towards you if you ask over email?
15. How softhearted would people feel towards you if you ask face-to-face?
16. How softhearted would people feel towards you if you ask over email?
17. How worried would people feel about you if you ask face-to-face?
18. How worried would people feel about you if you ask over email?
19. How troubled would people feel about you if you ask face-to-face?
20. How troubled would people feel about you if you ask over email?
21. How upset would people feel about you if you ask face-to-face?
22. How upset would people feel about you if you ask over email?
23. How good would people feel about themselves if they were to comply with your request face-to-face?
24. How good would people feel about themselves if they were to comply with your request over email?

A.4. Study 1 Gender difference SPSS output

```
LOGISTIC REGRESSION VARIABLES Medium
  /METHOD=ENTER Gender
  /CONTRAST (Gender)=Indicator
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
```

Logistic Regression – Study 1 Gender difference

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	49	98.0
	Missing Cases	1	2.0
	Total	50	100.0
Unselected Cases		0	.0
Total		50	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
FtF	0
email	1

Categorical Variables Codings

		Frequency	Parameter coding (1)
Gender	Male	23	1.000
	Female	26	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	.883	1	.347
	Block	.883	1	.347
	Model	.883	1	.347

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	65.383[a]	.018	.024

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

Classification Table[a]

			Predicted		
			Medium		Percentage
	Observed		FtF	email	Correct
Step 1	Medium	FtF	29	0	100.0
		email	20	0	.0
	Overall Percentage				59.2

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Gender(1)	.549	.587	.876	1	.349	1.731
	Constant	-.636	.412	2.380	1	.123	.529

a. Variable(s) entered on step 1: Gender.

A.5. Study 1 Predictions vs. Media selections

```
GLM FtFMon EmailMon
  /WSFACTOR=Prediction 2 Polynomial
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(Prediction)
  /PRINT=DESCRIPTIVE ETASQ
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=Prediction.
```

General Linear Model – FtF income vs. email income (Predictions)

Notes

Output Created		12-AUG-2016 07:22:21
Comments		
Input	Data	D:\profiles\mroghanizad\.spss\Study1 dissertaion\Study 3.75 analysis_1.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	50
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.
Syntax		GLM FtFMon EmailMon /WSFACTOR=Prediction 2 Polynomial /METHOD=SSTYPE(3) /EMMEANS=TABLES(Prediction) /PRINT=DESCRIPTIVE ETASQ /CRITERIA=ALPHA(.05) /WSDESIGN=Prediction.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.02

Within-Subjects Factors

Measure: MEASURE_1

Prediction	Dependent Variable
1	FtFMon
2	EmailMon

Descriptive Statistics

	Mean	Std. Deviation	N
FtFMon	3.8200	1.37678	50
EmailMon	2.4900	1.67968	50

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Prediction	Sphericity Assumed	44.223	1	44.223	32.880	.000	.402
	Greenhouse-Geisser	44.223	1.000	44.223	32.880	.000	.402
	Huynh-Feldt	44.223	1.000	44.223	32.880	.000	.402
	Lower-bound	44.223	1.000	44.223	32.880	.000	.402
Error(Prediction)	Sphericity Assumed	65.903	49	1.345			
	Greenhouse-Geisser	65.903	49.000	1.345			
	Huynh-Feldt	65.903	49.000	1.345			
	Lower-bound	65.903	49.000	1.345			

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	995.403	1	995.403	295.206	.000	.858
Error	165.222	49	3.372			

Estimated Marginal Means

Prediction

Measure: MEASURE_1

Prediction	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	3.820	.195	3.429	4.211
2	2.490	.238	2.013	2.967

```
SORT CASES  BY selectedMedium.
SPLIT FILE LAYERED BY selectedMedium.
GLM FtFMon EmailMon
  /WSFACTOR=Prediction 2 Polynomial
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(Prediction)
  /PRINT=DESCRIPTIVE ETASQ
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=Prediction.
```

General Linear Model – Predicted FtF and email incomes across FtF and email choosers

Notes

Output Created		12-AUG-2016 07:30:52
Comments		
Input	Data	D:\profiles\mroghanizad\.spss\Study1 dissertaion\Study 3.75 analysis_1.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	selectedMedium
	N of Rows in Working Data File	50
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.

Syntax		GLM FtFMon EmailMon /WSFACTOR=Prediction 2 Polynomial /METHOD=SSTYPE(3) /EMMEANS=TABLES(Prediction) /PRINT=DESCRIPTIVE ETASQ /CRITERIA=ALPHA(.05) /WSDESIGN=Prediction.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

Within-Subjects Factors

Measure: MEASURE_1

Prediction	Dependent Variable
1	FtFMon
2	EmailMon

Descriptive Statistics

selectedMedium		Mean	Std. Deviation	N
FtF	FtFMon	3.8793	1.27234	29
	EmailMon	2.1034	1.69758	29
Email	FtFMon	3.7381	1.53801	21
	EmailMon	3.0238	1.53685	21

Tests of Within-Subjects Effects

Measure: MEASURE_1

selected Medium	Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
FtF	Prediction	Sphericity Assumed	45.728	1	45.728	48.970	.000	.636
		Greenhouse-Geisser	45.728	1.000	45.728	48.970	.000	.636
		Huynh-Feldt	45.728	1.000	45.728	48.970	.000	.636

		Lower-bound	45.728	1.000	45.728	48.970	.000	.636
	Error(Prediction)	Sphericity Assumed	26.147	28	.934			
		Greenhouse-Geisser	26.147	28.000	.934			
		Huynh-Feldt	26.147	28.000	.934			
		Lower-bound	26.147	28.000	.934			
Email	Prediction	Sphericity Assumed	5.357	1	5.357	3.257	.086	.140
		Greenhouse-Geisser	5.357	1.000	5.357	3.257	.086	.140
		Huynh-Feldt	5.357	1.000	5.357	3.257	.086	.140
		Lower-bound	5.357	1.000	5.357	3.257	.086	.140
	Error(Prediction)	Sphericity Assumed	32.893	20	1.645			
		Greenhouse-Geisser	32.893	20.000	1.645			
		Huynh-Feldt	32.893	20.000	1.645			
		Lower-bound	32.893	20.000	1.645			

Prediction

Measure: MEASURE_1

				95% Confidence Interval	
selectedMedium	Prediction	Mean	Std. Error	Lower Bound	Upper Bound
FtF	1	3.879	.236	3.395	4.363
	2	2.103	.315	1.458	2.749
Email	1	3.738	.336	3.038	4.438
	2	3.024	.335	2.324	3.723

```
SPLIT FILE OFF.
T-TEST GROUPS=selectedMedium(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=FtFMon EmailMon
  /CRITERIA=CI(.95).
```

T-Test

Notes

Output Created	12-AUG-2016 07:37:21
Comments	

Input	Data	D:\profiles\mroghanizad\.spss\Study1 dissertaion\Study 3.75 analysis_1.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	50
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.
Syntax		T-TEST GROUPS=selectedMedium(1 2) /MISSING=ANALYSIS /VARIABLES=FtFMon EmailMon /CRITERIA=CI(.95).
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

Group Statistics

	selectedMedium	N	Mean	Std. Deviation	Std. Error Mean
FtFMon	FtF	29	3.8793	1.27234	.23627
	Email	21	3.7381	1.53801	.33562
EmailMon	FtF	29	2.1034	1.69758	.31523
	Email	21	3.0238	1.53685	.33537

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper

FtFMon	Equal variances assumed	.231	.633	.355	48	.724	.14122	.39806	-.65914	.94157
	Equal variances not assumed			.344	38.058	.733	.14122	.41044	-.68964	.97207
EmailMon	Equal variances assumed	.453	.504	-1.968	48	.055	-.92036	.46778	-1.86089	.02017
	Equal variances not assumed			-2.000	45.553	.052	-.92036	.46026	-1.84707	.00635

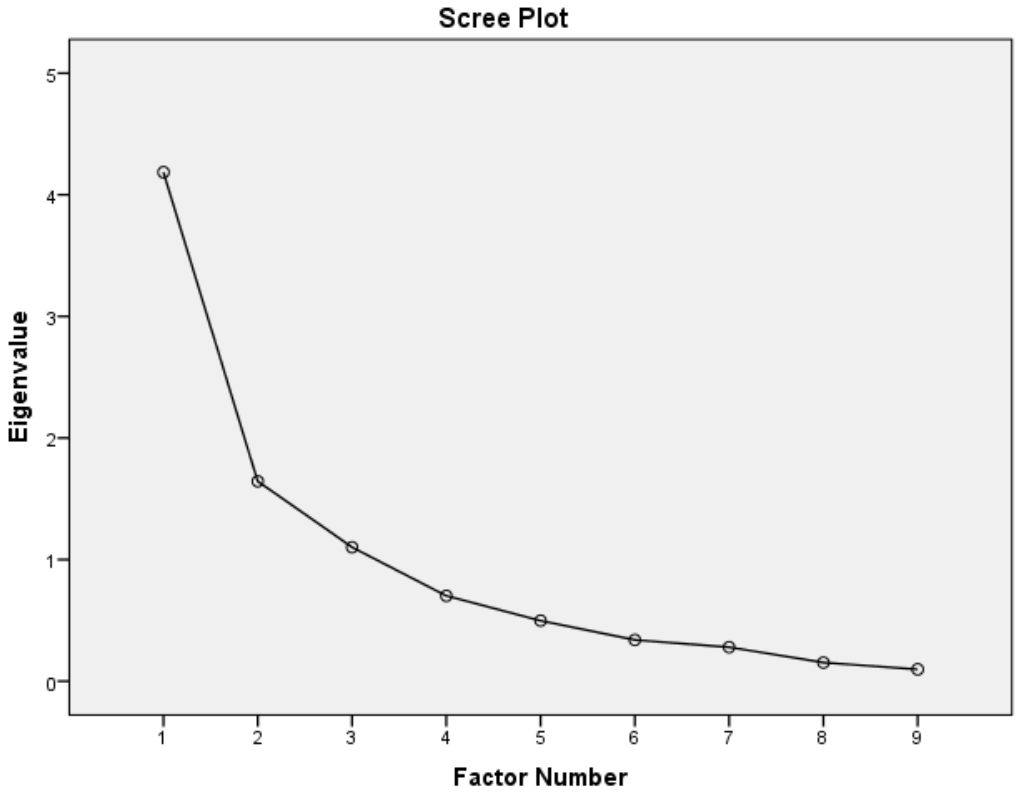
A.6. Study 1 Factor and reliability analyses

```
FACTOR
  /VARIABLES LessEffort LessTime LessEmbarr LessAwk MorConv MorConf MorEffec
FastMon MoMon
  /MISSING LISTWISE
  /ANALYSIS LessEffort LessTime LessEmbarr LessAwk MorConv MorConf MorEffec
FastMon MoMon
  /PRINT UNIVARIATE INITIAL CORRELATION KMO REPR EXTRACTION ROTATION
  /FORMAT SORT
  /PLOT EIGEN
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION ML
  /CRITERIA ITERATE(25) DELTA(0)
        /ROTATION OBLIMIN.
```

Communalities

	Initial	Extraction
LessEffort	.605	.573
LessTime	.767	.878
LessEmbarr	.745	.999
LessAwk	.739	.615
MorConv	.676	.688
MorConf	.634	.569
MorEffec	.613	.404
FastMon	.560	.498
MoMon	.695	.999

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.186	46.508	46.508	2.818	31.314	31.314
2	1.644	18.265	64.773	1.387	15.410	46.724
3	1.102	12.243	77.016	2.018	22.417	69.141
4	.702	7.799	84.815			
5	.498	5.529	90.344			
6	.339	3.769	94.113			
7	.280	3.106	97.219			
8	.153	1.699	98.918			
9	.097	1.082	100.000			



Factor Matrix[a]

	Factor		
	1	2	3
LessEmbarr	.759	.650	-.005
MoMon	-.756	.654	.003
LessAwk	.620	.408	.253
FastMon	-.580	.384	.117
MorEffec	-.492	.234	-.327
MorConf	.491	.345	.457
MorConv	.262	-.023	.787
LessTime	.539	.033	.766
LessEffort	.327	.217	.647

Extraction Method: Maximum Likelihood.[a]

a. 3 factors extracted. 7 iterations required.

Pattern Matrix[a]

	Factor		
	1	2	3
MoMon	-.999	.070	-.048
FastMon	-.708	-.086	.109
MorEffec	-.425	-.007	-.375
LessEmbarr	.033	1.044	-.130
LessAwk	.054	.661	.200
MorConf	-.038	.455	.444
MorConv	-.004	-.117	.876
LessTime	.148	.116	.831
LessEffort	-.103	.176	.683

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

Reliability analysis

```
RELIABILITY (More convenient index)
  /VARIABLES=MorConv LessTime LessEffort
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.852	.852	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
MorConv	8.4600	17.804	.705	.566	.811
LessTime	8.6800	14.263	.817	.675	.697
LessEffort	9.4600	17.111	.657	.468	.854

```
RELIABILITY (Awkwardness Index)
  /VARIABLES=LessEmbarr LessAwk MorConf
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.816	.815	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LessEmbarr	8.2800	10.859	.784	.625	.622
LessAwk	8.2600	11.339	.675	.541	.744
MorConf[6]	7.5800	14.249	.563	.355	.847

```
RELIABILITY (Effectiveness indenx)
  /VARIABLES=MorEffec MoMon FastMon
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
        /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on	N of Items

[6] This measure was removed from the index due to improvement.

	Standardized Items	
.769	.771	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
MorEffec	7.2400	15.329	.486	.275	.816
MoMon	8.3200	12.875	.732	.559	.541
FastMon	8.1200	13.944	.605	.476	.687

```
RELIABILITY (Awkward to refuse Index)
  /VARIABLES=DefAwkRef DefGuiltRef DefUncomfRef DefEmbarRef
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
        /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.948	.948	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
DefAwkRef	6.5957	36.724	.858	.759	.937
DefGuiltRef	7.0426	36.129	.910	.830	.921
DefUncomfRef	7.1064	37.097	.875	.766	.932
DefEmbarRef	7.5319	36.515	.857	.752	.937

```
RELIABILITY (Empathetic feeling Index)
  /VARIABLES=DefSymp DefCompass DefSoft
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
```

```
  /STATISTICS=DESCRIPTIVE SCALE CORR
        /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.944	.945	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
DefSymp	4.8636	12.400	.869	.762	.929
DefCompass	4.9091	11.619	.911	.831	.896
DefSoft	4.9091	13.340	.874	.776	.927

```
RELIABILITY (Feeling troubled Index)
  /VARIABLES=DefWorried DefTroub
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
        /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.821	.835	2

A.7. Study 1 Logistic regression

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	11.433[a]	.678	.911

a. Estimation terminated at iteration number 10 because parameter estimates changed by less than .001.

Classification Table[a]

			Predicted		
			selectedMedium		Percentage
	Observed		FtF	Email	Correct
Step 1	selectedMedium	FtF	27	2	93.1
		Email	2	19	90.5
	Overall Percentage				92.0

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	EffectInd	-2.831	1.492	3.599	1	.058	.059
	AwkIndex	.589	.466	1.599	1	.206	1.802
	ConvIndex	4.097	2.034	4.059	1	.044	60.188
	Constant	-12.551	6.876	3.332	1	.068	.000

a. Variable(s) entered on step 1: EffectInd, AwkIndex, ConvIndex.

This is part of a linear regression output. It was done to test for collinearity issues (last two columns)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.150	.182		6.327	.000		
	AwkIndex	.042	.025	.160	1.663	.103	.737	1.357
	ConvIndex	.125	.025	.490	5.034	.000	.721	1.386
	EffectInd	-.113	.025	-.402	-4.460	.000	.843	1.186

A.8. Study 1 Moderation analysis

```
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 2
    Y = selecMed
    X = ConvInd
    M = EffecInd
    W = AwkInd

Sample size
         50

**************************************************************************
Outcome: selecMed

Coding of binary DV for analysis:
  selecMed  Analysis
      1.00       .00
      2.00      1.00

Logistic Regression Summary
       -2LL   Model LL   McFadden   CoxSnell   Nagelkrk          n
     8.6955    59.3337      .8722      .6948      .9345    50.0000

Model
              coeff         se          Z          p       LLCI       ULCI
constant   -73.2764    56.7297    -1.2917      .1965  -184.4646    37.9118
EffecInd     1.0471     4.4948      .2329      .8158    -7.7626     9.8567
ConvInd     14.0405    10.2509     1.3697      .1708    -6.0508    34.1319
int_1        -.5863      .9123     -.6426      .5205    -2.3743     1.2017
AwkInd       9.4298     6.8143     1.3838      .1664    -3.9259    22.7855
int_2       -1.4923     1.0993    -1.3575      .1746    -3.6468      .6623

Interactions:
```

```
 int_1    ConvInd     X     EffecInd
 int_2    ConvInd     X     AwkInd

************************************************************************

Conditional effect of X on Y at values of the moderator(s):
     AwkInd   EffecInd     Effect       se          Z          p       LLCI       ULCI
     1.9026     2.1721     9.9279     6.5419     1.5176      .1291    -2.8940    22.7498
     1.9026     3.9467     8.8876     5.2541     1.6915      .0907    -1.4103    19.1855
     1.9026     5.7212     7.8472     4.2019     1.8675      .0618     -.3884    16.0828
     3.7900     2.1721     7.1115     4.6006     1.5458      .1222    -1.9055    16.1285
     3.7900     3.9467     6.0711     3.2962     1.8418      .0655     -.3894    12.5316
     3.7900     5.7212     5.0308     2.4096     2.0878      .0368      .3081     9.7535
     5.6774     2.1721     4.2950     2.8537     1.5051      .1323    -1.2981     9.8882
     5.6774     3.9467     3.2547     1.6534     1.9685      .0490      .0141     6.4953
     5.6774     5.7212     2.2144     1.6017     1.3825      .1668     -.9248     5.3536

Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.

********************* ANALYSIS NOTES AND WARNINGS ************************

Level of confidence for all confidence intervals in output:
    95.00

      ------ END MATRIX -----
```

A.9. Study 1 and 3 Questionnaire completed by helpers

Directions: The following statements concern your perception about yourself in a variety of situations. Your task is to indicate the strength of your agreement with each statement, utilizing a scale in which **1 denotes strong disagreement**, **5 denotes strong agreement**, and 2, 3, and 4 represent intermediate judgments. In the boxes after each statement, click a number from 1 to 5.

There are no "right" or "wrong" answers, so select the number that most closely reflects you on each statement. These results are being used in scientific research, so please try to give accurate answers. Take your time and consider each statement carefully. Once you have completed all questions click "Submit" at the bottom.

I see myself as someone who...

1. ...Is talkative

Disagree 1 2 3 4 5 Agree

2. ...Tends to find fault with others

Disagree 1 2 3 4 5 Agree

3. ...Does a thorough job

Disagree 1 2 3 4 5 Agree

4. ...Is depressed, blue

Disagree 1 2 3 4 5 Agree

5. ...Is original, comes up with new ideas

Disagree 1 2 3 4 5 Agree

6. ...Is reserved

Disagree 1 2 3 4 5 Agree

7. ...Is helpful and unselfish with others

Disagree 1 2 3 4 5 Agree

8. ...Can be somewhat careless

Disagree 1 2 3 4 5 Agree

9. ...Is relaxed, handles stress well

Disagree 1 2 3 4 5 Agree

10. ...Is curious about many different things

Disagree 1 2 3 4 5 Agree

11. ...Is full of energy

Disagree 1 2 3 4 5 Agree

12. ...Starts quarrels with others

Disagree 1 2 3 4 5 Agree

13. ...Is a reliable worker

Disagree 1 2 3 4 5 Agree

14. ...Can be tense

Disagree 1 2 3 4 5 Agree

15. ...Is ingenious, a deep thinker

Disagree 1 2 3 4 5 Agree

16. ...Generates a lot of enthusiasm

Disagree 1 2 3 4 5 Agree

17. ...Has a forgiving nature

Disagree 1 2 3 4 5 Agree

18. ...Tends to be disorganized

Disagree 1 2 3 4 5 Agree

19. ...Worries a lot

Disagree 1 2 3 4 5 Agree

20. ...Has an active imagination

Disagree 1 2 3 4 5 Agree

21. ...Tends to be quiet

Disagree 1 2 3 4 5 Agree

22. ...Is generally trusting

Disagree 1 2 3 4 5 Agree

23. ...Tends to be lazy

Disagree 1 2 3 4 5 Agree

24. ...Is emotionally stable, not easily upset

Disagree 1 2 3 4 5 Agree

25. ...Is inventive

Disagree 1 2 3 4 5 Agree

Appendix B Study 2 Supporting materials and SPSS output

B.1. Study 2 Questionnaire

Potential helpers' questions	**Potential help-seekers' questions**
1- How likely is it that you would agree to this request (1. Not at all - 7. Extremely)?	1- How likely is it that this person would agree to this request (1. Not at all - 7. Extremely)?
2- How willing would you be to agree to this request (1. Not at all - 7. Extremely)?	2- How willing would this person be to agree to this request (1. Not at all - 7. Extremely)?
3- How probable is it that you would agree to this request (1. Not at all - 7. Extremely)?	3- How probable is it that this person would agree to this request (1. Not at all - 7. Extremely)?
4- How difficult would it be to say "no" to this request (1. Not at all - 7. Extremely)?	4- How difficult would it be to say "no" to this request (1. Not at all - 7. Extremely)?
5- How guilty would you feel if you said "no" to this request (1. Not at all - 7. Extremely)?	5- How guilty would this person feel if they said "no" to this request (1. Not at all - 7. Extremely)?
6- How bad would you feel if you said "no" to this request (1. Not at all - 7. Extremely)?	6- How bad would this person feel if they said "no" to this request (1. Not at all - 7. Extremely)?
7- How anxious would you feel about saying "no" to this request (1. Not at all - 7. Extremely)?	7- How anxious would this person feel about saying "no" to this request (1. Not at all - 7. Extremely)?
8- How comfortable would it be for you to say "no" to this request (1. Not at all - 7. Extremely)?	8- How comfortable would it be for this person to say "no" to this request (1. Not at all - 7. Extremely)?
9- How easy would it be for you to say "no" to this request (1. Not at all - 7. Extremely)?	9- How easy would it be for this person to say "no" to this request (1. Not at all - 7. Extremely)?
10- How awkward would it be for you to say "no" to this request (1. Not at all - 7. Extremely)?	10- How awkward would it be for this person to say "no" to this request (1. Not at all - 7. Extremely)?
11- How embarrassing would it be for you to say "no" to this request (1. Not at all - 7. Extremely)?	11- How embarrassing would it be for this person to say "no" to this request (1. Not at all - 7. Extremely)?

B.2. Study 2 Scenarios

Helper Phone number	*Imagine the following situation:* *You are at a mixer for incoming college freshman at State University and you have volunteered to help orient new students. One of the new students comes up to you and says[You receive the below email from one of them]:* *"Hello. I was admitted to State University for the next term and have just arrived in town. I have been looking for housing, and I have almost come to an agreement with a landlord about renting a room in his house. However, he is an old-fashioned man and insists that he be provided with a local phone number just in case. Unfortunately, I don't have a local number yet. I'm from Canada, and I don't know anyone here. Since I was told you are one of the students who are willing to help orient new students, I'm wondering if I can give him your phone number. I don't think he will contact you, but in case he does, you can just let me know and I'll be in touch with him. I would really appreciate it!"*
Helper interview	*Imagine the following situation:* *You are at home on a Sunday afternoon when one of your neighbours knocks on the door and says [when you receive the message below through Facebook from one of your neighbours whom you have seen around]:* *"Hello. I work for a non-profit organization, and I need to conduct a few random face-to-face interviews to better understand where people in the community stand on a number of issues. The interview will take about a half an hour of your time. I'm wondering if you would be willing to meet me in the coffee shop down the street to answer some questions. I would really appreciate it!"*
Helper Signing a petition	*Imagine the following situation:* *You work in a big corporation where employees don't always know one another. You are out for dinner when you recognize a fellow employee from a presentation he gave earlier. This employee approaches you and says [when you receive an email. You recognize the name on the email as a fellow employee whose presentation you saw earlier. This employee's message says]:* *"Hello! I am running for union representative. In order to officially be able to run, I need to collect enough signatures on my petition. Would you be willing to add your name to my petition? I would really appreciate it!"*
Help-seeker Phone number	*Imagine the following situation:* *Imagine that you are an incoming college freshman at State University [You send the following email to a current student who has volunteered to help orient new students:] and you are currently attending a mixer for new students and current students who have volunteered to help orient new students. You approach a current student and say:* *"Hello. I was admitted to State University for the next term and have just arrived in town. I have been looking for housing, and I have almost come to an agreement with a landlord about renting a room in his house. However, he is an old-fashioned man and insists that he be provided with a local phone number just in case. Unfortunately, I don't have a local number yet. I'm from Canada, and I don't know anyone here. Since I was told you are one of the students who are willing to help orient new students, I'm wondering if I can give him your phone number. I don't think he will contact you, but in case he does, you can just let me know and I'll be in touch with him. I would really appreciate it!"*
Help-seeker Interview	*Imagine the following situation:* *It is a Sunday afternoon and you are working for a non-profit organization that has asked you to interview people to find out where they stand on a number of issues. You go to one of your neighbors' houses, knock on the door and say:[You are searching Facebook for people in your community and find one of your neighbors You send the below message to this neighbor:]* *"Hello. I work for a non-profit organization, and I need to conduct a few random face-to-face interviews to better understand where people in the community stand on a number of issues. The interview will take about a half an hour of your time. I'm wondering if you would be willing to meet me in the coffee shop down the street to answer some questions. I would really appreciate it!"*

Help-seeker Signing a petition	*Imagine the following situation:* *You work in a big corporation where employees don't always know one another and are running for union representative. You are out for dinner [when you decide to send an email to a fellow employee who was in the audience of a presentation you gave earlier. The email is as follows:] when you recognize a fellow employee who was in the audiences of a presentation you gave earlier. You approach this employee and say:* *"Hello! I am running for union representative. In order to officially be able to run, I need to collect enough signatures on my petition. Would you be willing to add your name to my petition? I would really appreciate it!"*

B.3. Study 2 Repeated measure analysis.

```
GET
  FILE='/Users/vanessabohns/Desktop/SPS results ver.1 round 2 repeated
measure likely.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
GLM likelyindex1 likelyindex3 likelyindex4 BY FTFCMC role
  /WSFACTOR=LikelyIndex 3 Polynomial
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(OVERALL)
  /EMMEANS=TABLES(FTFCMC)
  /EMMEANS=TABLES(role)
  /EMMEANS=TABLES(LikelyIndex)
  /EMMEANS=TABLES(FTFCMC*role)
  /EMMEANS=TABLES(FTFCMC*LikelyIndex)
  /EMMEANS=TABLES(role*LikelyIndex)
  /EMMEANS=TABLES(FTFCMC*role*LikelyIndex)
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=LikelyIndex
  /DESIGN=FTFCMC role FTFCMC*role.
```

Within-Subjects Factors

Measure: MEASURE_1

LikelyIndex	Dependent Variable
1	likelyindex1
2	likelyindex3
3	likelyindex4

Between-Subjects Factors

		Value Label	N
FTF=1 CMC=2	1	FTF	55
	2	CMC	53
Her=1 HS=2	1	Helper	52
	2	Helpseeker	56

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.

LikelyIndex	Sphericity Assumed	129.592	2	64.796	28.118	.000
	Greenhouse-Geisser	129.592	1.901	68.170	28.118	.000
	Huynh-Feldt	129.592	1.991	65.080	28.118	.000
	Lower-bound	129.592	1.000	129.592	28.118	.000
LikelyIndex * FTFCMC	Sphericity Assumed	1.937	2	.968	.420	.657
	Greenhouse-Geisser	1.937	1.901	1.019	.420	.647
	Huynh-Feldt	1.937	1.991	.973	.420	.657
	Lower-bound	1.937	1.000	1.937	.420	.518
LikelyIndex * role	Sphericity Assumed	1.469	2	.735	.319	.727
	Greenhouse-Geisser	1.469	1.901	.773	.319	.716
	Huynh-Feldt	1.469	1.991	.738	.319	.726
	Lower-bound	1.469	1.000	1.469	.319	.574
LikelyIndex * FTFCMC * role	Sphericity Assumed	1.300	2	.650	.282	.754
	Greenhouse-Geisser	1.300	1.901	.684	.282	.743
	Huynh-Feldt	1.300	1.991	.653	.282	.753
	Lower-bound	1.300	1.000	1.300	.282	.596
Error(LikelyIndex)	Sphericity Assumed	479.312	208	2.304		
	Greenhouse-Geisser	479.312	197.704	2.424		
	Huynh-Feldt	479.312	207.093	2.314		
	Lower-bound	479.312	104.000	4.609		

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	6063.749	1	6063.749	1693.846	.000
FTFCMC	.091	1	.091	.026	.873
role	1.075	1	1.075	.300	.585
FTFCMC * role	15.212	1	15.212	4.249	.042
Error	372.306	104	3.580		

Descriptive Statistics

Dependent Variable: Liklyindex

FTF=1 CMC=2	Her=1 HS=2	Mean	Std. Deviation	N
FTF	Helper	4.5952	1.25534	28
	Helpseeker	4.0453	1.09139	27
	Total	4.3253	1.19935	55
CMC	Helper	4.1944	1.14736	24
	Helpseeker	4.5134	.85161	29
	Total	4.3690	.99923	53
Total	Helper	4.4103	1.21189	52
	Helpseeker	4.2877	.99398	56
	Total	4.3467	1.10075	108

Appendix C Study 3 Supporting materials and SPSS output

C.1. Study 3 Repeated measure ANOVA

```
GLM Actual Predict BY Media
  /WSFACTOR=PredAct 2 Polynomial
  /METHOD=SSTYPE(3)
  /EMMEANS=TABLES(Media*PredAct)
  /PRINT=DESCRIPTIVE ETASQ
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=PredAct
  /DESIGN=Media.
```

Within-Subjects Factors

Measure: MEASURE_1

PredAct	Dependent Variable
1	Actual
2	Predict

Between-Subjects Factors

		Value Label	N
Media	1	FtF	27
	2	CMC	19

Descriptive Statistics

	Media	Mean	Std. Deviation	N
Actual	FtF	7.15	1.812	27
	CMC	.21	.535	19
	Total	4.28	3.734	46
Predict	FtF	5.11	2.225	27
	CMC	5.53	1.712	19
	Total	5.28	2.018	46

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
PredAct	Sphericity Assumed	59.944	1	59.944	24.080	.000	.354
	Greenhouse-Geisser	59.944	1.000	59.944	24.080	.000	.354
	Huynh-Feldt	59.944	1.000	59.944	24.080	.000	.354
	Lower-bound	59.944	1.000	59.944	24.080	.000	.354
PredAct * Media	Sphericity Assumed	301.466	1	301.466	121.099	.000	.733
	Greenhouse-Geisser	301.466	1.000	301.466	121.099	.000	.733
	Huynh-Feldt	301.466	1.000	301.466	121.099	.000	.733
	Lower-bound	301.466	1.000	301.466	121.099	.000	.733
Error(PredAct)	Sphericity Assumed	109.534	44	2.489			
	Greenhouse-Geisser	109.534	44.000	2.489			
	Huynh-Feldt	109.534	44.000	2.489			
	Lower-bound	109.534	44.000	2.489			

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	1805.870	1	1805.870	489.171	.000	.917
Media	237.217	1	237.217	64.257	.000	.594
Error	162.435	44	3.692			

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Predict	1.923[a]	1	1.923	.466	.498
	Actual	536.761[b]	1	536.761	260.778	.000
Intercept	Predict	1261.923	1	1261.923	306.083	.000

	Actual	603.891	1	603.891	293.393	.000
Media	Predict	1.923	1	1.923	.466	.498
	Actual	536.761	1	536.761	260.778	.000
Error	Predict	181.404	44	4.123		
	Actual	90.565	44	2.058		
Total	Predict	1467.000	46			
	Actual	1471.000	46			
Corrected Total	Predict	183.326	45			
	Actual	627.326	45			

a. R Squared = .010 (Adjusted R Squared = -.012)

b. R Squared = .856 (Adjusted R Squared = .852)

Tests of Within-Subjects Effects

Measure: MEASURE_1

Media	Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
FtF	PredAct	Sphericity Assumed	56.019	1	56.019	17.447	.000	.402
		Greenhouse-Geisser	56.019	1.000	56.019	17.447	.000	.402
		Huynh-Feldt	56.019	1.000	56.019	17.447	.000	.402
		Lower-bound	56.019	1.000	56.019	17.447	.000	.402
	Error(PredAct)	Sphericity Assumed	83.481	26	3.211			
		Greenhouse-Geisser	83.481	26.000	3.211			
		Huynh-Feldt	83.481	26.000	3.211			
		Lower-bound	83.481	26.000	3.211			
CMC	PredAct	Sphericity Assumed	268.447	1	268.447	185.473	.000	.912
		Greenhouse-Geisser	268.447	1.000	268.447	185.473	.000	.912
		Huynh-Feldt	268.447	1.000	268.447	185.473	.000	.912
		Lower-bound	268.447	1.000	268.447	185.473	.000	.912
	Error(PredAct)	Sphericity Assumed	26.053	18	1.447			
		Greenhouse-Geisser	26.053	18.000	1.447			
		Huynh-Feldt	26.053	18.000	1.447			
		Lower-bound	26.053	18.000	1.447			

C.2. Study 3 Social index analysis

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	AllSocInd	21.472[a]	1	21.472	21.443	.000	.328
	Predicted	1.923[b]	1	1.923	.466	.498	.010
	Actual	536.761[c]	1	536.761	260.778	.000	.856
Intercept	AllSocInd	267.366	1	267.366	267.005	.000	.859
	Predicted	1261.923	1	1261.923	306.083	.000	.874
	Actual	603.891	1	603.891	293.393	.000	.870
Condition	AllSocInd	21.472	1	21.472	21.443	.000	.328
	Predicted	1.923	1	1.923	.466	.498	.010
	Actual	536.761	1	536.761	260.778	.000	.856
Error	AllSocInd	44.060	44	1.001			
	Predicted	181.404	44	4.123			
	Actual	90.565	44	2.058			
Total	AllSocInd	369.083	46				
	Predicted	1467.000	46				
	Actual	1471.000	46				
Corrected Total	AllSocInd	65.532	45				
	Predicted	183.326	45				
	Actual	627.326	45				

a. R Squared = .328 (Adjusted R Squared = .312)

b. R Squared = .010 (Adjusted R Squared = -.012)

c. R Squared = .856 (Adjusted R Squared = .852)

Appendix D Study 4 Supporting materials and SPSS output

D.1. Study 4 and 5 Free task

Instruction: There are grammatical errors in the following passage. Please read and apply necessary corrections. THKS

"Shoo!" said Mr. Dursley loudly.

A cat didn't move. It just gave him stern look. Were this normal cat behaviour? Mr. Dursley wondered. Trying pulling himself together, he let himself to the house. He was still determined not to mention anything to his wife.

Mrs. Dursley had had a nice, normally day. She told him with dinner all about Mrs. Next Door's problems with her daughter and how Dudley had learned the new word ("Won't!"). Mr. Dursley tries act normally. When Dudley been put to bed, he went in the living room in time to catch the last report on the evening news:

"And finally, bird-watcher everywhere have report that the nation's owls have been behaving very unusual today. Although owls normally hunt under night and are hardly ever seen in daylight, their have been hundreds of sightings these birds flying to every direction since sunrise. Experts are unable explain why the owls have sudden changed their sleeping pattern." A newscaster allows himself a grin. "Most mysterious. And now, over for Jim McGuffin with the weather. Going to be any more showers of owls tonight, Jim?"

D.2. Study 4 $1 Questionnaire helpers' perspective

These questions refer to your reactions and thoughts when you were asked to complete **an editing task for <u>free</u>.**

Did you perform the editing (free) task? Yes No

Please use the scale provided below to answer the following questions.

Please note that your answers to these questions are confidential [and will be placed in a sealed box]. The person who has made this request **will not have access to your answers** to these questions.

1. How easy was it/would it be for you to refuse this request?
   Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent
2. How awkward did you/would you feel refusing this request?
   Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent
3. How guilty did you/would you feel refusing this request?
   Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent
4. How uncomfortable did you/would you feel refusing this request?
   Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent
5. How embarrassed did you/would you feel refusing this request?
   Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent
6. How sympathetic did you feel to the requester?
   Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent
7. How compassionate did you feel to the requester?
   Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent
8. How softhearted did you feel to the requester?
   Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent
9. How well-meaning do you consider the requester?
   Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent
10. To what extent were you worried that the requester was trying to take advantage of you?
    Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent
11. To what extent do you consider the requester to be honest?
    Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent

D.3. Study 4 $1 Questionnaire requesters' perspective

Please use the scale provided below to answer the following questions. These questions refer to your reactions to your task of asking people to complete the free grammar correction task.

Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent

1. How easy do you think it would be for people to refuse your request?
2. How awkward do you think people would feel refusing your request?
3. How guilty do you think people would feel refusing your request?
4. How uncomfortable do you think people would feel refusing your request?
5. How embarrassed do you think people would feel refusing your request?
6. How sympathetic would people feel towards your request?
7. How compassionate would people feel towards you?
8. How softhearted would people feel towards you?
9. To what extent would this person think that you are well-meaning?
10. To what extent would this person think that you are trying to take advantage of them?
11. To what extent would this person think that you are honest?

D.4. Study 4 Indices reliability analysis

```
RELIABILITY
  /VARIABLES=Awkward Guilty Uncomfortable Embarrassed
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	N of Items
.899	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Awkward	9.1437	9.687	.785	.866
Guilty	9.2954	9.906	.764	.874
Uncomfortable	9.2713	10.637	.821	.855
Embarrassed	9.7286	10.861	.742	.881

```
RELIABILITY
  /VARIABLES=Sympathetic Compass Softhearted
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	N of Items
.919	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted

Sympathetic	7.3138	5.541	.785	.925
Compass	7.8012	4.778	.846	.877
Softhearted	7.7064	4.890	.885	.843

```
COMPUTE TakAdvaR=7-TakeAdva.
EXECUTE.
RELIABILITY
  /VARIABLES=WellMeaning Honest TakAdvaR
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability Statistics

Cronbach's Alpha	N of Items
.769	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
WellMeaning	8.7879	4.292	.616	.683
Honest	8.6802	4.161	.607	.687
TakAdvaR	9.6319	3.349	.608	.701

D.5. Study 4 ANOVAs

```
GLM CompRate EmpIndex TrustInd SocInd2 BY Medium Role
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /EMMEANS=TABLES(Medium*Role)
  /PRINT=DESCRIPTIVE ETASQ
  /CRITERIA=ALPHA(.05)
  /DESIGN= Medium Role Medium*Role.
```

Descriptive Statistics

	Medium	Role	Mean	Std. Deviation	N
CompRate	FtF	HelpSeeker	4.4333	1.69550	30
		Helper	5.4333	1.81342	30
		Total	4.9333	1.81208	60
	CMC	HelpSeeker	4.1000	2.00603	30
		Helper	2.4333	1.30472	30
		Total	3.2667	1.87641	60
	Total	HelpSeeker	4.2667	1.84911	60
		Helper	3.9333	2.17744	60
		Total	4.1000	2.01840	120
EmpIndex	FtF	HelpSeeker	3.3778	1.37502	30
		Helper	4.6333	.56040	30
		Total	4.0056	1.21838	60
	CMC	HelpSeeker	3.2444	1.15448	30
		Helper	3.9587	.46164	30
		Total	3.6016	.94317	60
	Total	HelpSeeker	3.3111	1.26054	60
		Helper	4.2960	.61222	60
		Total	3.8036	1.10371	120
TrustInd	FtF	HelpSeeker	4.5556	1.04435	30
		Helper	5.3254	.42977	30
		Total	4.9405	.88179	60
	CMC	HelpSeeker	4.1444	1.03088	30
		Helper	4.0413	.47351	30
		Total	4.0929	.79703	60
	Total	HelpSeeker	4.3500	1.04948	60

		Helper	4.6833	.78754	60
		Total	4.5167	.93893	120
SocInd2	FtF	HelpSeeker	3.6778	1.23016	30
		Helper	3.3113	.49739	30
		Total	3.4945	.94846	60
	CMC	HelpSeeker	2.4778	1.29154	30
		Helper	2.9270	.51451	30
		Total	2.7024	1.00066	60
	Total	HelpSeeker	3.0778	1.38918	60
		Helper	3.1191	.53783	60
		Total	3.0985	1.04912	120

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	CompRate	140.000[a]	3	46.667	15.700	.000	.289
	EmpIndex	36.195[b]	3	12.065	12.867	.000	.250
	TrustInd	30.603[c]	3	10.201	15.925	.000	.292
	SocInd2	23.866[d]	3	7.955	8.616	.000	.182
Intercept	CompRate	2017.200	1	2017.200	678.640	.000	.854
	EmpIndex	1736.059	1	1736.059	1851.474	.000	.941
	TrustInd	2448.033	1	2448.033	3821.617	.000	.971
	SocInd2	1152.049	1	1152.049	1247.662	.000	.915
Medium	CompRate	83.333	1	83.333	28.036	.000	.195
	EmpIndex	4.896	1	4.896	5.221	.024	.043
	TrustInd	21.554	1	21.554	33.647	.000	.225
	SocInd2	18.825	1	18.825	20.387	.000	.149
Role	CompRate	3.333	1	3.333	1.121	.292	.010
	EmpIndex	29.102	1	29.102	31.037	.000	.211
	TrustInd	3.333	1	3.333	5.204	.024	.043
	SocInd2	.051	1	.051	.056	.814	.000
Medium * Role	CompRate	53.333	1	53.333	17.943	.000	.134
	EmpIndex	2.197	1	2.197	2.343	.129	.020
	TrustInd	5.716	1	5.716	8.924	.003	.071
	SocInd2	4.990	1	4.990	5.405	.022	.045

Error	CompRate	344.800	116	2.972			
	EmpIndex	108.769	116	.938			
	TrustInd	74.307	116	.641			
	SocInd2	107.110	116	.923			
Total	CompRate	2502.000	120				
	EmpIndex	1881.023	120				
	TrustInd	2552.943	120				
	SocInd2	1283.026	120				
Corrected Total	CompRate	484.800	119				
	EmpIndex	144.964	119				
	TrustInd	104.910	119				
	SocInd2	130.977	119				

a. R Squared = .289 (Adjusted R Squared = .270)

b. R Squared = .250 (Adjusted R Squared = .230)

c. R Squared = .292 (Adjusted R Squared = .273)

d. R Squared = .182 (Adjusted R Squared = .161)

```
SORT CASES  BY Medium.
SPLIT FILE LAYERED BY Medium.
GLM CompRate EmpIndex TrustInd SocInd2 BY Role
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT=DESCRIPTIVE ETASQ
  /CRITERIA=ALPHA(.05)
  /DESIGN= Role.
```

Tests of Between-Subjects Effects

Medium	Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
FtF	Corrected Model	CompRate	15.000[a]	1	15.000	4.868	.031	.077
		EmpIndex	23.646[b]	1	23.646	21.451	.000	.270
		TrustInd	8.890[c]	1	8.890	13.941	.000	.194
		SocInd2	2.015[d]	1	2.015	2.289	.136	.038
	Intercept	CompRate	1460.267	1	1460.267	473.865	.000	.891
		EmpIndex	962.669	1	962.669	873.280	.000	.938
		TrustInd	1464.498	1	1464.498	2296.568	.000	.975

		SocInd2	732.702	1	732.702	832.296	.000	.935
	Role	CompRate	15.000	1	15.000	4.868	.031	.077
		EmpIndex	23.646	1	23.646	21.451	.000	.270
		TrustInd	8.890	1	8.890	13.941	.000	.194
		SocInd2	2.015	1	2.015	2.289	.136	.038
	Error	CompRate	178.733	58	3.082			
		EmpIndex	63.937	58	1.102			
		TrustInd	36.986	58	.638			
		SocInd2	51.060	58	.880			
	Total	CompRate	1654.000	60				
		EmpIndex	1050.252	60				
		TrustInd	1510.374	60				
		SocInd2	785.776	60				
	Corrected Total	CompRate	193.733	59				
		EmpIndex	87.583	59				
		TrustInd	45.876	59				
		SocInd2	53.075	59				
CMC	Corrected Model	CompRate	41.667[e]	1	41.667	14.552	.000	.201
		EmpIndex	7.653[f]	1	7.653	9.901	.003	.146
		TrustInd	.160[g]	1	.160	.248	.620	.004
		SocInd2	3.027[h]	1	3.027	3.132	.082	.051
	Intercept	CompRate	640.267	1	640.267	223.618	.000	.794
		EmpIndex	778.286	1	778.286	1006.882	.000	.946
		TrustInd	1005.089	1	1005.089	1562.005	.000	.964
		SocInd2	438.172	1	438.172	453.409	.000	.887
	Role	CompRate	41.667	1	41.667	14.552	.000	.201
		EmpIndex	7.653	1	7.653	9.901	.003	.146
		TrustInd	.160	1	.160	.248	.620	.004
		SocInd2	3.027	1	3.027	3.132	.082	.051
	Error	CompRate	166.067	58	2.863			
		EmpIndex	44.832	58	.773			
		TrustInd	37.321	58	.643			
		SocInd2	56.051	58	.966			
	Total	CompRate	848.000	60				

		EmpIndex	830.771	60			
		TrustInd	1042.569	60			
		SocInd2	497.249	60			
	Corrected Total	CompRate	207.733	59			
		EmpIndex	52.485	59			
		TrustInd	37.480	59			
		SocInd2	59.078	59			

a. R Squared = .077 (Adjusted R Squared = .062)

b. R Squared = .270 (Adjusted R Squared = .257)

c. R Squared = .194 (Adjusted R Squared = .180)

d. R Squared = .038 (Adjusted R Squared = .021)

e. R Squared = .201 (Adjusted R Squared = .187)

f. R Squared = .146 (Adjusted R Squared = .131)

g. R Squared = .004 (Adjusted R Squared = -.013)

h. R Squared = .051 (Adjusted R Squared = .035)

```
GLM CompRate EmpIndex TrustInd SocInd2 BY Medium
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT=DESCRIPTIVE ETASQ
  /CRITERIA=ALPHA(.05)
  /DESIGN= Medium.
```

Tests of Between-Subjects Effects

Role	Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
HelpSeeker	Corrected Model	CompRate	1.667[a]	1	1.667	.483	.490	.008
		EmpIndex	.267[b]	1	.267	.165	.686	.003
		TrustInd	2.535[c]	1	2.535	2.355	.130	.039
		SocInd2	21.600[d]	1	21.600	13.579	.001	.190
	Intercept	CompRate	1092.267	1	1092.267	316.652	.000	.845
		EmpIndex	657.807	1	657.807	408.132	.000	.876
		TrustInd	1135.350	1	1135.350	1054.480	.000	.948
		SocInd2	568.363	1	568.363	357.309	.000	.860
	Medium	CompRate	1.667	1	1.667	.483	.490	.008

		EmpIndex	.267	1	.267	.165	.686	.003
		TrustInd	2.535	1	2.535	2.355	.130	.039
		SocInd2	21.600	1	21.600	13.579	.001	.190
	Error	CompRate	200.067	58	3.449			
		EmpIndex	93.481	58	1.612			
		TrustInd	62.448	58	1.077			
		SocInd2	92.259	58	1.591			
	Total	CompRate	1294.000	60				
		EmpIndex	751.556	60				
		TrustInd	1200.333	60				
		SocInd2	682.222	60				
	Corrected Total	CompRate	201.733	59				
		EmpIndex	93.748	59				
		TrustInd	64.983	59				
		SocInd2	113.859	59				
Helper	Corrected Model	CompRate	135.000[e]	1	135.000	54.099	.000	.483
		EmpIndex	6.826[f]	1	6.826	25.899	.000	.309
		TrustInd	24.735[g]	1	24.735	120.977	.000	.676
		SocInd2	2.215[h]	1	2.215	8.651	.005	.130
	Intercept	CompRate	928.267	1	928.267	371.991	.000	.865
		EmpIndex	1107.353	1	1107.353	4201.255	.000	.986
		TrustInd	1316.017	1	1316.017	6436.603	.000	.991
		SocInd2	583.737	1	583.737	2279.728	.000	.975
	Medium	CompRate	135.000	1	135.000	54.099	.000	.483
		EmpIndex	6.826	1	6.826	25.899	.000	.309
		TrustInd	24.735	1	24.735	120.977	.000	.676
		SocInd2	2.215	1	2.215	8.651	.005	.130
	Error	CompRate	144.733	58	2.495			
		EmpIndex	15.287	58	.264			
		TrustInd	11.859	58	.204			
		SocInd2	14.851	58	.256			
	Total	CompRate	1208.000	60				
		EmpIndex	1129.467	60				
		TrustInd	1352.610	60				

	SocInd2	600.804	60				
Corrected Total	CompRate	279.733	59				
	EmpIndex	22.114	59				
	TrustInd	36.593	59				
	SocInd2	17.066	59				

a. R Squared = .008 (Adjusted R Squared = -.009)

b. R Squared = .003 (Adjusted R Squared = -.014)

c. R Squared = .039 (Adjusted R Squared = .022)

d. R Squared = .190 (Adjusted R Squared = .176)

e. R Squared = .483 (Adjusted R Squared = .474)

f. R Squared = .309 (Adjusted R Squared = .297)

g. R Squared = .676 (Adjusted R Squared = .670)

h. R Squared = .130 (Adjusted R Squared = .115)

D.6. Study 4 Mediation analysis

```
USE ALL.
COMPUTE filter_$=(Role=1).
VARIABLE LABELS filter_$ 'Role=1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix Raw data help-seekers only

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 4
    Y = CompRate
    X = Medium
    M = SocInd2

Sample size
         60

**************************************************************************
Outcome: SocInd2

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4356      .1897     1.5907    13.5791     1.0000    58.0000      .0005

Model
              coeff         se          t          p       LLCI       ULCI
constant     4.8778      .5149     9.4734      .0000     3.8471     5.9085
Medium      -1.2000      .3256    -3.6850      .0005    -1.8519     -.5481

**************************************************************************
Outcome: CompRate

Model Summary
```

```
          R       R-sq        MSE          F        df1        df2          p
      .3334      .1111     3.1459     3.5632     2.0000    57.0000      .0348

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.4533     1.1557     2.1228      .0381      .1391     4.7675
SocInd2       .4743      .1847     2.5684      .0129      .1045      .8440
Medium        .2358      .5087      .4635      .6448     -.7830     1.2545

****************** DIRECT AND INDIRECT EFFECTS *************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
      .2358      .5087      .4635      .6448     -.7830     1.2545

Indirect effect of X on Y
            Effect    Boot SE   BootLLCI   BootULCI
SocInd2     -.5691      .2691    -1.2156     -.1378

****************** ANALYSIS NOTES AND WARNINGS *************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----



restore.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix Raw data help-seekers only

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 4
    Y = CompRate
    X = Medium
   M1 = SocInd2
```

```
   M2 = EmpIndex
   M3 = TrustInd

Sample size
         60

**************************************************************************
Outcome: SocInd2

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4356      .1897     1.5907    13.5791     1.0000    58.0000      .0005

Model
              coeff         se          t          p       LLCI       ULCI
constant     4.8778      .5149     9.4734      .0000     3.8471     5.9085
Medium      -1.2000      .3256    -3.6850      .0005    -1.8519     -.5481

**************************************************************************
Outcome: EmpIndex

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .0533      .0028     1.6117      .1655     1.0000    58.0000      .6857

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.5111      .5183     6.7744      .0000     2.4736     4.5486
Medium       -.1333      .3278     -.4068      .6857     -.7895      .5228

**************************************************************************
Outcome: TrustInd

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1975      .0390     1.0767     2.3546     1.0000    58.0000      .1304

Model
              coeff         se          t          p       LLCI       ULCI
constant     4.9667      .4236    11.7245      .0000     4.1187     5.8146
Medium       -.4111      .2679    -1.5345      .1304     -.9474      .1252

**************************************************************************
Outcome: CompRate

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4028      .1623     3.0727     2.6633     4.0000    55.0000      .0420

Model
              coeff         se          t          p       LLCI       ULCI
constant     1.0317     1.5727      .6560      .5146    -2.1202     4.1836
SocInd2       .3516      .2027     1.7345      .0884     -.0546      .7578
EmpIndex      .2736      .2059     1.3292      .1893     -.1389      .6861
TrustInd      .2133      .2275      .9378      .3525     -.2425      .6692
Medium        .2127      .5196      .4094      .6838     -.8285     1.2540
```

```
******************** DIRECT AND INDIRECT EFFECTS *************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
      .2127      .5196      .4094      .6838     -.8285     1.2540

Indirect effect of X on Y
             Effect    Boot SE   BootLLCI   BootULCI
TOTAL        -.5461      .3424    -1.2422      .1338
SocInd2      -.4219      .2861    -1.1107      .0601
EmpIndex     -.0365      .1319     -.5025      .1129
TrustInd     -.0877      .1395     -.5070      .0799

******************** ANALYSIS NOTES AND WARNINGS *************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----



restore.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 6
    Y = CompRate
    X = Medium
   M1 = TrustInd
   M2 = EmpIndex
   M3 = SocInd2

Sample size
         60
```

```
**************************************************************************
Outcome: TrustInd

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1975      .0390     1.0767     2.3546     1.0000    58.0000      .1304

Model
             coeff         se          t          p       LLCI       ULCI
constant    4.9667      .4236    11.7245      .0000     4.1187     5.8146
Medium      -.4111      .2679    -1.5345      .1304     -.9474      .1252

**************************************************************************
Outcome: EmpIndex

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .2155      .0465     1.5683     1.3883     2.0000    57.0000      .2578

Model
             coeff         se          t          p       LLCI       ULCI
constant    2.2404      .9386     2.3870      .0203      .3609     4.1198
TrustInd     .2559      .1585     1.6145      .1119     -.0615      .5732
Medium      -.0281      .3298     -.0853      .9323     -.6887      .6324

**************************************************************************
Outcome: SocInd2

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .5858      .3431     1.3356     9.7499     3.0000    56.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    3.7415      .9084     4.1188      .0001     1.9218     5.5612
TrustInd    -.0832      .1496     -.5563      .5802     -.3828      .2164
EmpIndex     .4413      .1222     3.6105      .0007      .1965      .6862
Medium     -1.1754      .3044    -3.8611      .0003    -1.7852     -.5655

**************************************************************************
Outcome: CompRate

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4028      .1623     3.0727     2.6633     4.0000    55.0000      .0420

Model
             coeff         se          t          p       LLCI       ULCI
constant    1.0317     1.5727      .6560      .5146    -2.1202     4.1836
TrustInd     .2133      .2275      .9378      .3525     -.2425      .6692
EmpIndex     .2736      .2059     1.3292      .1893     -.1389      .6861
SocInd2      .3516      .2027     1.7345      .0884     -.0546      .7578
Medium       .2127      .5196      .4094      .6838     -.8285     1.2540

****************** DIRECT AND INDIRECT EFFECTS ************************
```

```
Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
      .2127      .5196      .4094      .6838     -.8285     1.2540

Indirect effect(s) of X on Y
           Effect    Boot SE   BootLLCI   BootULCI
Total:     -.5461      .3424    -1.2422      .1338
Ind1 :     -.0877      .1395     -.5070      .0799
Ind2 :     -.0288      .0465     -.2524      .0069
Ind3 :      .0120      .0258     -.0089      .1285
Ind4 :     -.0163      .0239     -.1361      .0020
Ind5 :     -.0077      .1249     -.3332      .2194
Ind6 :     -.0044      .0656     -.1780      .1058
Ind7 :     -.4132      .2719    -1.0406      .0555

Indirect effect key
 Ind1 :   Medium   ->       TrustInd ->       CompRate
 Ind2 :   Medium   ->       TrustInd ->       EmpIndex ->       CompRate
 Ind3 :   Medium   ->       TrustInd ->       SocInd2  ->       CompRate
 Ind4 :   Medium   ->       TrustInd ->       EmpIndex ->       SocInd2  ->
CompRate
 Ind5 :   Medium   ->       EmpIndex ->       CompRate
 Ind6 :   Medium   ->       EmpIndex ->       SocInd2  ->       CompRate
 Ind7 :   Medium   ->       SocInd2  ->       CompRate

******************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----



restore.
USE ALL.
COMPUTE filter_$=(Role=2).
VARIABLE LABELS filter_$ 'Role=2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

```
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix raw data Helpers only

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 4
    Y = CompRate
    X = Medium
    M = SocInd2

Sample size
        250

**************************************************************************
Outcome: SocInd2

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1211      .0147     2.6244     3.6925     1.0000   248.0000      .0558

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.9090      .3326    11.7538      .0000     3.2540     4.5640
Medium       -.5170      .2690    -1.9216      .0558    -1.0469      .0129

**************************************************************************
Outcome: CompRate

Coding of binary DV for analysis:
  CompRate  Analysis
       .00       .00
      1.00      1.00

Logistic Regression Summary
       -2LL   Model LL   McFadden   CoxSnell   Nagelkrk          n
   326.6559    11.4053      .0337      .0446      .0602   250.0000

Model
              coeff         se          Z          p       LLCI       ULCI
constant     1.7889      .5352     3.3423      .0008      .7399     2.8380
SocInd2      -.0183      .0816     -.2240      .8228     -.1783      .1417
Medium      -1.1480      .3483    -3.2966      .0010    -1.8306     -.4655
```

```
******************** DIRECT AND INDIRECT EFFECTS *************************

Direct effect of X on Y
     Effect         SE          Z          p       LLCI       ULCI
    -1.1480      .3483    -3.2966      .0010    -1.8306     -.4655

Indirect effect of X on Y
            Effect    Boot SE   BootLLCI   BootULCI
SocInd2      .0095      .0483     -.0734      .1277

******************** ANALYSIS NOTES AND WARNINGS *************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

NOTE: Some cases were deleted due to missing data.  The number of such cases
was:
  4

------ END MATRIX -----



restore.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 *************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 4
    Y = CompRate
    X = Medium
   M1 = SocInd2
   M2 = EmpIndex
   M3 = TrustInd

Sample size
        250
```

```
**************************************************************************
Outcome: SocInd2

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1211      .0147     2.6244     3.6925     1.0000   248.0000      .0558

Model
             coeff         se          t          p       LLCI       ULCI
constant    3.9090      .3326    11.7538      .0000     3.2540     4.5640
Medium      -.5170      .2690    -1.9216      .0558    -1.0469      .0129

**************************************************************************
Outcome: EmpIndex

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1835      .0337     1.9387     8.6412     1.0000   248.0000      .0036

Model
             coeff         se          t          p       LLCI       ULCI
constant    5.3141      .2858    18.5907      .0000     4.7511     5.8771
Medium      -.6798      .2312    -2.9396      .0036    -1.1352     -.2243

**************************************************************************
Outcome: TrustInd

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4192      .1757     1.2483    52.8599     1.0000   248.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    6.6678      .2294    29.0704      .0000     6.2161     7.1196
Medium     -1.3491      .1856    -7.2705      .0000    -1.7145     -.9836

**************************************************************************
Outcome: CompRate

Coding of binary DV for analysis:
  CompRate  Analysis
       .00       .00
      1.00      1.00

Logistic Regression Summary
       -2LL   Model LL   McFadden   CoxSnell   Nagelkrk          n
   315.6923    22.3688      .0662      .0856      .1155   250.0000

Model
             coeff         se          Z          p       LLCI       ULCI
constant    -.1651      .9554     -.1729      .8628    -2.0376     1.7073
SocInd2     -.1064      .0906    -1.1734      .2406     -.2840      .0713
EmpIndex     .2861      .1138     2.5145      .0119      .0631      .5090
TrustInd     .1294      .1311      .9868      .3238     -.1276      .3863
Medium      -.8828      .3822    -2.3099      .0209    -1.6318     -.1337
```

```
******************** DIRECT AND INDIRECT EFFECTS *************************

Direct effect of X on Y
     Effect         SE          Z          p       LLCI       ULCI
     -.8828      .3822    -2.3099      .0209    -1.6318     -.1337

Indirect effect of X on Y
             Effect    Boot SE   BootLLCI   BootULCI
TOTAL        -.3140      .1956     -.7262      .0382
SocInd2       .0550      .0630     -.0244      .2407
EmpIndex     -.1945      .1160     -.4974     -.0334
TrustInd     -.1745      .1889     -.5716      .1720

******************** ANALYSIS NOTES AND WARNINGS *************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

NOTE: Some cases were deleted due to missing data.  The number of such cases
was:
  4

------ END MATRIX -----



restore.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 4
    Y = CompRate
```

```
    X = Medium
    M = EmpIndex

Sample size
        252

**************************************************************************
Outcome: EmpIndex

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1840      .0339     1.9255     8.7643     1.0000   250.0000      .0034

Model
              coeff         se          t          p       LLCI       ULCI
constant     5.3179      .2842    18.7093      .0000     4.7581     5.8777
Medium       -.6817      .2303    -2.9605      .0034    -1.1352     -.2282

**************************************************************************
Outcome: CompRate

Coding of binary DV for analysis:
  CompRate  Analysis
       .00       .00
      1.00      1.00

Logistic Regression Summary
       -2LL   Model LL   McFadden   CoxSnell   Nagelkrk          n
   321.0469    19.8552      .0582      .0758      .1022   252.0000

Model
              coeff         se          Z          p       LLCI       ULCI
constant      .2638      .6479      .4073      .6838    -1.0059     1.5336
EmpIndex      .2827      .0984     2.8729      .0041      .0898      .4756
Medium       -.9828      .3529    -2.7850      .0054    -1.6744     -.2911

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          Z          p       LLCI       ULCI
     -.9828      .3529    -2.7850      .0054    -1.6744     -.2911

Indirect effect of X on Y
            Effect    Boot SE   BootLLCI   BootULCI
EmpIndex     -.1927      .1025     -.4528     -.0491

****************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

NOTE: Some cases were deleted due to missing data.  The number of such cases
was:
```

```
  2

------ END MATRIX -----


restore.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 6
    Y = CompRate
    X = Medium
   M1 = TrustInd
   M2 = EmpIndex
   M3 = SocInd2

Sample size
        250

**************************************************************************
Outcome: TrustInd

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4192      .1757     1.2483    52.8599     1.0000   248.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     6.6678      .2294    29.0704      .0000     6.2161     7.1196
Medium      -1.3491      .1856    -7.2705      .0000    -1.7145     -.9836

**************************************************************************
Outcome: EmpIndex

Model Summary
          R       R-sq        MSE          F        df1        df2          p
```

```
      .4223      .1784     1.6551    26.8082     2.0000   247.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.0987      .5545     3.7850      .0002     1.0066     3.1908
TrustInd      .4822      .0731     6.5950      .0000      .3382      .6262
Medium       -.0292      .2353     -.1241      .9013     -.4927      .4343

**************************************************************************
Outcome: SocInd2

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .3687      .1359     2.3201    12.8994     3.0000   246.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.6470      .6753     3.9200      .0001     1.3170     3.9771
TrustInd     -.1617      .0939    -1.7229      .0862     -.3467      .0232
EmpIndex      .4404      .0753     5.8463      .0000      .2920      .5888
Medium       -.4358      .2786    -1.5641      .1191     -.9846      .1130

**************************************************************************
Outcome: CompRate

Coding of binary DV for analysis:
  CompRate  Analysis
       .00       .00
      1.00      1.00

Logistic Regression Summary
       -2LL   Model LL   McFadden   CoxSnell   Nagelkrk          n
   315.6923    22.3688      .0662      .0856      .1155   250.0000

Model
              coeff         se          Z          p       LLCI       ULCI
constant     -.1651      .9554     -.1729      .8628    -2.0376     1.7073
TrustInd      .1294      .1311      .9868      .3238     -.1276      .3863
EmpIndex      .2861      .1138     2.5145      .0119      .0631      .5090
SocInd2      -.1064      .0906    -1.1734      .2406     -.2840      .0713
Medium       -.8828      .3822    -2.3099      .0209    -1.6318     -.1337

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          Z          p       LLCI       ULCI
     -.8828      .3822    -2.3099      .0209    -1.6318     -.1337

Indirect effect(s) of X on Y
           Effect    Boot SE   BootLLCI   BootULCI
Total:     -.3140      .1956     -.7262      .0382
Ind1 :     -.1745      .1889     -.5716      .1720
Ind2 :     -.1861      .0940     -.4263     -.0445
Ind3 :     -.0232      .0262     -.1034      .0086
Ind4 :      .0305      .0287     -.0153      .1025
Ind5 :     -.0084      .0741     -.1865      .1232
Ind6 :      .0014      .0146     -.0202      .0461
```

```
Ind7 :      .0464      .0564     -.0199      .2127

Indirect effect key
 Ind1 :   Medium   ->       TrustInd ->       CompRate
 Ind2 :   Medium   ->       TrustInd ->       EmpIndex ->       CompRate
 Ind3 :   Medium   ->       TrustInd ->       SocInd2  ->       CompRate
 Ind4 :   Medium   ->       TrustInd ->       EmpIndex ->       SocInd2  ->
CompRate
 Ind5 :   Medium   ->       EmpIndex ->       CompRate
 Ind6 :   Medium   ->       EmpIndex ->       SocInd2  ->       CompRate
 Ind7 :   Medium   ->       SocInd2  ->       CompRate

******************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

NOTE: Some cases were deleted due to missing data.  The number of such cases
was:
  4

------ END MATRIX -----
```

Appendix E Study 5 Supporting materials and SPSS output

E.1. Study 5 Main questionnaire

Please use the scale provided below to answer the following questions. These questions refer to your reactions to your task of asking a stranger / your acquaintance / your friend to correct the grammatical errors.

Not at all 1----------2----------3----------4----------5----------6----------7 To a great extent

1. How easy do you think it would be for a stranger / your acquaintance / your friend to refuse your request?
2. How awkward do you think a stranger / your acquaintance / your friend would feel refusing your request?
3. How compassionate would a stranger / your acquaintance / your friend feel towards you?
4. To what extent would a stranger / your acquaintance / your friend think that you are trying to take advantage of them?
5. How convenient is it for you to seek help?
6. How awkward do you feel seeking help?
7. How embarrassed you feel if you are rejected?

E.2. Study 5 Demographic questionnaire

Age? (Years)

Gender

- ❍ Male
- ❍ Female

Cultural background

North America

West Europe

East Europe

Asia

India

Middle East

South America

African

Household income

What year are you in?

Department?

Do you have any previous work experience? If yes, how many months?

Average number of emails that you send and receive in a week?

How long have you lived in Canada? (Years)

If less than 5 years, in what country you have lived most of your life?

E.3. Study 5 ANOVAs

```
GLM ActRate PredRate BY Medium
  /WSFACTOR=CompRate 2 Polynomial
  /METHOD=SSTYPE(3)
  /PLOT=PROFILE(Medium*CompRate)
  /EMMEANS=TABLES(Medium*CompRate)
  /PRINT=DESCRIPTIVE ETASQ
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=CompRate
  /DESIGN=Medium.
```

Within-Subjects Factors

Measure: MEASURE_1

CompRate	Dependent Variable
1	ActRate
2	PredRate

Between-Subjects Factors

Closenes			Value Label	N
Close	Medium	1.00	FtF	30
		2.00	CMC	30
Acquaintance	Medium	1.00	FtF	30
		2.00	CMC	30
Stranger	Medium	1.00	FtF	30
		2.00	CMC	29

Descriptive Statistics

Closenes		Medium	Mean	Std. Deviation	N
Close	ActRate	FtF	4.1307	1.40799	30
		CMC	2.1000	1.29588	30
		Total	3.1153	1.68767	60
	PredRate	FtF	4.6000	1.30252	30
		CMC	4.0333	1.21721	30
		Total	4.3167	1.28210	60

Acquaintance	ActRate	FtF	4.0000	1.41421	30
		CMC	1.7587	1.45401	30
		Total	2.8793	1.81642	60
	PredRate	FtF	4.3333	1.09334	30
		CMC	3.7000	1.51202	30
		Total	4.0167	1.34658	60
Stranger	ActRate	FtF	3.1535	1.33112	30
		CMC	.1034	.30993	29
		Total	1.6543	1.81587	59
	PredRate	FtF	3.9000	1.18467	30
		CMC	2.9310	1.36096	29
		Total	3.4237	1.35447	59

Comparing compliance rate (actual vs. predicted – within-subject) data split on closeness levels

Measure: MEASURE_1

Closenes	Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Close	CompRate	Sphericity Assumed	43.296	1	43.296	40.772	.000	.413
		Greenhouse-Geisser	43.296	1.000	43.296	40.772	.000	.413
		Huynh-Feldt	43.296	1.000	43.296	40.772	.000	.413
		Lower-bound	43.296	1.000	43.296	40.772	.000	.413
	CompRate * Medium	Sphericity Assumed	16.075	1	16.075	15.138	.000	.207
		Greenhouse-Geisser	16.075	1.000	16.075	15.138	.000	.207
		Huynh-Feldt	16.075	1.000	16.075	15.138	.000	.207
		Lower-bound	16.075	1.000	16.075	15.138	.000	.207
	Error(CompRate)	Sphericity Assumed	61.591	58	1.062			
		Greenhouse-Geisser	61.591	58.000	1.062			
		Huynh-Feldt	61.591	58.000	1.062			
		Lower-bound	61.591	58.000	1.062			
Acquaintance	CompRate	Sphericity Assumed	38.806	1	38.806	34.190	.000	.371
		Greenhouse-Geisser	38.806	1.000	38.806	34.190	.000	.371
		Huynh-Feldt	38.806	1.000	38.806	34.190	.000	.371
		Lower-bound	38.806	1.000	38.806	34.190	.000	.371

	CompRate * Medium	Sphericity Assumed	19.392	1	19.392	17.086	.000	.228
		Greenhouse-Geisser	19.392	1.000	19.392	17.086	.000	.228
		Huynh-Feldt	19.392	1.000	19.392	17.086	.000	.228
		Lower-bound	19.392	1.000	19.392	17.086	.000	.228
	Error(CompRate)	Sphericity Assumed	65.831	58	1.135			
		Greenhouse-Geisser	65.831	58.000	1.135			
		Huynh-Feldt	65.831	58.000	1.135			
		Lower-bound	65.831	58.000	1.135			
Stranger	CompRate	Sphericity Assumed	94.184	1	94.184	100.078	.000	.637
		Greenhouse-Geisser	94.184	1.000	94.184	100.078	.000	.637
		Huynh-Feldt	94.184	1.000	94.184	100.078	.000	.637
		Lower-bound	94.184	1.000	94.184	100.078	.000	.637
	CompRate * Medium	Sphericity Assumed	31.930	1	31.930	33.929	.000	.373
		Greenhouse-Geisser	31.930	1.000	31.930	33.929	.000	.373
		Huynh-Feldt	31.930	1.000	31.930	33.929	.000	.373
		Lower-bound	31.930	1.000	31.930	33.929	.000	.373
	Error(CompRate)	Sphericity Assumed	53.643	57	.941			
		Greenhouse-Geisser	53.643	57.000	.941			
		Huynh-Feldt	53.643	57.000	.941			
		Lower-bound	53.643	57.000	.941			

```
SORT CASES  BY Closenes.
SPLIT FILE LAYERED BY Closenes.
UNIANOVA ActRate BY Medium
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT=ETASQ DESCRIPTIVE
  /CRITERIA=ALPHA(.05)
  /DESIGN=Medium.
```

Comparing actual compliance rates in FtF vs. email.

Dependent Variable: ActRate

Closenes	Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Close	Corrected Model	61.854[a]	1	61.854	33.784	.000	.368
	Intercept	582.318	1	582.318	318.054	.000	.846
	Medium	61.854	1	61.854	33.784	.000	.368

	Error	106.191	58	1.831			
	Total	750.363	60				
	Corrected Total	168.045	59				
Acquaintance	Corrected Model	75.354[b]	1	75.354	36.631	.000	.387
	Intercept	497.434	1	497.434	241.816	.000	.807
	Medium	75.354	1	75.354	36.631	.000	.387
	Error	119.310	58	2.057			
	Total	692.098	60				
	Corrected Total	194.664	59				
Stranger	Corrected Model	137.174[c]	1	137.174	144.596	.000	.717
	Intercept	156.416	1	156.416	164.878	.000	.743
	Medium	137.174	1	137.174	144.596	.000	.717
	Error	54.074	57	.949			
	Total	352.715	59				
	Corrected Total	191.248	58				

a. R Squared = .368 (Adjusted R Squared = .357)

b. R Squared = .387 (Adjusted R Squared = .377)

c. R Squared = .717 (Adjusted R Squared = .712)

```
UNIANOVA PredRate BY Medium
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT=ETASQ DESCRIPTIVE
  /CRITERIA=ALPHA(.05)
  /DESIGN=Medium.
```

Comparing predicted compliance rates in FtF vs. email.

Dependent Variable: PredRate

Closenes	Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Close	Corrected Model	4.817[a]	1	4.817	3.031	.087	.050
	Intercept	1118.017	1	1118.017	703.562	.000	.924
	Medium	4.817	1	4.817	3.031	.087	.050
	Error	92.167	58	1.589			
	Total	1215.000	60				

	Corrected Total	96.983	59				
Acquaintance	Corrected Model	6.017[b]	1	6.017	3.456	.068	.056
	Intercept	968.017	1	968.017	556.074	.000	.906
	Medium	6.017	1	6.017	3.456	.068	.056
	Error	100.967	58	1.741			
	Total	1075.000	60				
	Corrected Total	106.983	59				
Stranger	Corrected Model	13.845[c]	1	13.845	8.526	.005	.130
	Intercept	688.082	1	688.082	423.723	.000	.881
	Medium	13.845	1	13.845	8.526	.005	.130
	Error	92.562	57	1.624			
	Total	798.000	59				
	Corrected Total	106.407	58				

a. R Squared = .050 (Adjusted R Squared = .033)

b. R Squared = .056 (Adjusted R Squared = .040)

c. R Squared = .130 (Adjusted R Squared = .115)

Study 5 – Omnibus analysis.

```
SPLIT FILE OFF.
DATASET ACTIVATE DataSet1.

SAVE OUTFILE='C:\Users\Mahdi Roghanizad\Dropbox\UW PhD\Study 4 and 5 '+
    'results\SPSS\Closeness\Closeness final.sav'
  /COMPRESSED.
GLM ActRate PredRate BY Medium Closenes
  /WSFACTOR=Compliance 2 Polynomial
  /METHOD=SSTYPE(3)
  /POSTHOC=Closenes(TUKEY)
  /PRINT=DESCRIPTIVE ETASQ
  /CRITERIA=ALPHA(.05)
  /WSDESIGN=Compliance
  /DESIGN=Medium Closenes Medium*Closenes.
```

Within-Subjects Factors

Measure: MEASURE_1

Compliance	Dependent Variable
1	ActRate
2	PredRate

Omnibus analysis repeated measure

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Compliance	Sphericity Assumed	169.244	1	169.244	161.706	.000	.483
	Greenhouse-Geisser	169.244	1.000	169.244	161.706	.000	.483
	Huynh-Feldt	169.244	1.000	169.244	161.706	.000	.483
	Lower-bound	169.244	1.000	169.244	161.706	.000	.483
Compliance * Medium	Sphericity Assumed	66.006	1	66.006	63.066	.000	.267
	Greenhouse-Geisser	66.006	1.000	66.006	63.066	.000	.267
	Huynh-Feldt	66.006	1.000	66.006	63.066	.000	.267
	Lower-bound	66.006	1.000	66.006	63.066	.000	.267
Compliance * Closenes	Sphericity Assumed	7.606	2	3.803	3.634	.028	.040
	Greenhouse-Geisser	7.606	2.000	3.803	3.634	.028	.040
	Huynh-Feldt	7.606	2.000	3.803	3.634	.028	.040
	Lower-bound	7.606	2.000	3.803	3.634	.028	.040
Compliance * Medium * Closenes	Sphericity Assumed	1.546	2	.773	.739	.479	.008
	Greenhouse-Geisser	1.546	2.000	.773	.739	.479	.008
	Huynh-Feldt	1.546	2.000	.773	.739	.479	.008
	Lower-bound	1.546	2.000	.773	.739	.479	.008
Error(Compliance)	Sphericity Assumed	181.064	173	1.047			
	Greenhouse-Geisser	181.064	173.000	1.047			
	Huynh-Feldt	181.064	173.000	1.047			
	Lower-bound	181.064	173.000	1.047			

Post Hoc Tests – Tuly HSD

Closeness

Multiple Comparisons

Measure: MEASURE_1

Tukey HSD

(I) Closenes	(J) Closenes	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Close	Acquaintance	.2680	.19239	.347	-.1868	.7228
	Stranger	1.1770*	.19320	.000	.7202	1.6337
Acquaintance	Close	-.2680	.19239	.347	-.7228	.1868
	Stranger	.9090*	.19320	.000	.4522	1.3657
Stranger	Close	-1.1770*	.19320	.000	-1.6337	-.7202
	Acquaintance	-.9090*	.19320	.000	-1.3657	-.4522

Based on observed means.

The error term is Mean Square(Error) = 1.110.

*. The mean difference is significant at the .05 level.

E.4. Study 5 Feeling about making request - ANOVAs

```
GLM HSEasy HSAwkward HSEmbarr BY Medium Closenes
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /POSTHOC=Closenes(TUKEY)
  /PRINT=DESCRIPTIVE ETASQ
  /CRITERIA=ALPHA(.05)
  /DESIGN= Medium Closenes Medium*Closenes.
```

Descriptive Statistics

	Medium	Closenes	Mean	Std. Deviation	N
HSEasy	FtF	Close	5.2000	1.73006	30
		Acquaintance	4.6000	1.75381	30
		Stranger	4.1667	1.64177	30
		Total	4.6556	1.74279	90
	CMC	Close	4.7333	1.52978	30
		Acquaintance	4.1333	1.63440	30
		Stranger	4.0345	1.63626	29
		Total	4.3034	1.61248	89
	Total	Close	4.9667	1.63610	60
		Acquaintance	4.3667	1.69712	60
		Stranger	4.1017	1.62624	59
		Total	4.4804	1.68383	179
HSAwkward	FtF	Close	2.6000	2.01032	30
		Acquaintance	3.8667	2.09652	30
		Stranger	4.4000	1.75381	30
		Total	3.6222	2.08029	90
	CMC	Close	3.2000	1.91905	30
		Acquaintance	4.1333	1.87052	30
		Stranger	4.2759	1.90669	29
		Total	3.8652	1.93761	89
	Total	Close	2.9000	1.97184	60
		Acquaintance	4.0000	1.97441	60
		Stranger	4.3390	1.81574	59
		Total	3.7430	2.00866	179
HSEmbarr	FtF	Close	2.6667	1.84453	30

	Acquaintance	3.5000	1.73702	30
	Stranger	3.1667	1.66264	30
	Total	3.1111	1.76383	90
CMC	Close	2.4000	1.71404	30
	Acquaintance	2.7000	1.74494	30
	Stranger	2.7586	1.84498	29
	Total	2.6180	1.75490	89
Total	Close	2.5333	1.77044	60
	Acquaintance	3.1000	1.77267	60
	Stranger	2.9661	1.75151	59
	Total	2.8659	1.77179	179

Help-seekers' Feelings about making request

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	HSEasy	30.216[a]	5	6.043	2.203	.056	.060
	HSAwkward	74.252[b]	5	14.850	3.990	.002	.103
	HSEmbarr	23.638[c]	5	4.728	1.528	.183	.042
Intercept	HSEasy	3588.773	1	3588.773	1308.541	.000	.883
	HSAwkward	2511.389	1	2511.389	674.720	.000	.796
	HSEmbarr	1469.372	1	1469.372	475.015	.000	.733
Medium	HSEasy	5.644	1	5.644	2.058	.153	.012
	HSAwkward	2.741	1	2.741	.736	.392	.004
	HSEmbarr	10.812	1	10.812	3.495	.063	.020
Closenes	HSEasy	23.473	2	11.736	4.279	.015	.047
	HSAwkward	67.478	2	33.739	9.065	.000	.095
	HSEmbarr	10.476	2	5.238	1.693	.187	.019
Medium * Closenes	HSEasy	1.106	2	.553	.202	.818	.002
	HSAwkward	3.906	2	1.953	.525	.593	.006
	HSEmbarr	2.289	2	1.144	.370	.691	.004
Error	HSEasy	474.466	173	2.743			
	HSAwkward	643.926	173	3.722			
	HSEmbarr	535.144	173	3.093			
Total	HSEasy	4098.000	179				

	HSAwkward	3226.000	179				
	HSEmbarr	2029.000	179				
Corrected Total	HSEasy	504.682	178				
	HSAwkward	718.179	178				
	HSEmbarr	558.782	178				

a. R Squared = .060 (Adjusted R Squared = .033)

b. R Squared = .103 (Adjusted R Squared = .077)

c. R Squared = .042 (Adjusted R Squared = .015)

Post Hoc Tests

Closenes

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Closenes	(J) Closenes	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
HSEasy	Close	Acquaintance	.6000	.30236	.119	-.1148	1.3148
		Stranger	.8650*	.30363	.014	.1472	1.5828
	Acquaintance	Close	-.6000	.30236	.119	-1.3148	.1148
		Stranger	.2650	.30363	.658	-.4528	.9828
	Stranger	Close	-.8650*	.30363	.014	-1.5828	-.1472
		Acquaintance	-.2650	.30363	.658	-.9828	.4528
HSAwkward	Close	Acquaintance	-1.1000*	.35224	.006	-1.9327	-.2673
		Stranger	-1.4390*	.35373	.000	-2.2752	-.6028
	Acquaintance	Close	1.1000*	.35224	.006	.2673	1.9327
		Stranger	-.3390	.35373	.604	-1.1752	.4972
	Stranger	Close	1.4390*	.35373	.000	.6028	2.2752
		Acquaintance	.3390	.35373	.604	-.4972	1.1752
HSEmbarr	Close	Acquaintance	-.5667	.32111	.185	-1.3258	.1925
		Stranger	-.4328	.32247	.374	-1.1951	.3296
	Acquaintance	Close	.5667	.32111	.185	-.1925	1.3258
		Stranger	.1339	.32247	.909	-.6284	.8962
	Stranger	Close	.4328	.32247	.374	-.3296	1.1951
		Acquaintance	-.1339	.32247	.909	-.8962	.6284

Based on observed means.

The error term is Mean Square(Error) = 3.093.

*. The mean difference is significant at the .05 level.

E.5. Study 5 Moderation and mediation analysis

```
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 8
    Y = PredRate
    X = Medium
   M1 = Awkward
   M2 = Compass
   M3 = TakeAdva
    W = Closenes

Sample size
        179

**************************************************************************
Outcome: Awkward

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1357      .0184     2.9065     1.0947     3.0000   175.0000      .3528

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.5366     1.0638     2.3843      .0182      .4369     4.6362
Medium        .5634      .6735      .8366      .4040     -.7658     1.8926
Closenes      .7392      .4930     1.4995      .1355     -.2337     1.7122
int_1        -.3726      .3126    -1.1919      .2349     -.9895      .2444

Interactions:

 int_1    Medium      X     Closenes

**************************************************************************
Outcome: Compass

Model Summary
          R       R-sq        MSE          F        df1        df2          p
```

```
      .3536      .1250     1.6947     8.3347     3.0000   175.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     4.2138      .8124     5.1871      .0000     2.6105     5.8170
Medium        .5751      .5143     1.1183      .2650     -.4399     1.5901
Closenes      .0480      .3764      .1275      .8987     -.6950      .7910
int_1        -.3980      .2387    -1.6674      .0972     -.8691      .0731

Interactions:

 int_1    Medium      X     Closenes

************************************************************************
Outcome: TakeAdva

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4476      .2003     2.1988    14.6141     3.0000   175.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     1.2611      .9253     1.3629      .1747     -.5651     3.0874
Medium        .1389      .5858      .2370      .8129    -1.0173     1.2950
Closenes      .2291      .4288      .5344      .5937     -.6171     1.0754
int_1         .3375      .2719     1.2414      .2161     -.1991      .8741

Interactions:

 int_1    Medium      X     Closenes

************************************************************************
Outcome: PredRate

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .5136      .2638     1.4335    10.2708     6.0000   172.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.8056      .8157     4.6656      .0000     2.1956     5.4156
Awkward       .0926      .0553     1.6733      .0961     -.0166      .2017
Compass       .3102      .0737     4.2113      .0000      .1648      .4556
TakeAdva     -.0376      .0629     -.5978      .5508     -.1619      .0866
Medium       -.5477      .4753    -1.1522      .2508    -1.4859      .3906
Closenes     -.2248      .3486     -.6448      .5199     -.9129      .4633
int_2        -.0292      .2224     -.1315      .8955     -.4682      .4097

Interactions:

 int_2    Medium      X     Closenes

****************** DIRECT AND INDIRECT EFFECTS ************************

Conditional direct effect(s) of X on Y at values of the moderator(s):
   Closenes     Effect         SE          t          p       LLCI       ULCI
     1.1768     -.5821      .2560    -2.2741      .0242    -1.0874     -.0769
```

```
     1.9944     -.6060      .1862    -3.2538      .0014     -.9736     -.2384
     2.8120     -.6299      .2645    -2.3816      .0183    -1.1520     -.1078

Conditional indirect effect(s) of X on Y at values of the moderator(s):

Mediator
          Closenes     Effect    Boot SE   BootLLCI   BootULCI
Awkward     1.1768      .0116      .0412     -.0506      .1319
Awkward     1.9944     -.0166      .0318     -.1164      .0211
Awkward     2.8120     -.0448      .0546     -.2108      .0147

Mediator
          Closenes     Effect    Boot SE   BootLLCI   BootULCI
Compass     1.1768      .0331      .0801     -.1128      .2126
Compass     1.9944     -.0678      .0635     -.2130      .0382
Compass     2.8120     -.1688      .1015     -.4351     -.0185

Mediator
           Closenes     Effect    Boot SE   BootLLCI   BootULCI
TakeAdva     1.1768     -.0202      .0384     -.1302      .0367
TakeAdva     1.9944     -.0306      .0531     -.1583      .0602
TakeAdva     2.8120     -.0409      .0731     -.2261      .0756

Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.

-----
Indirect effect of highest order product:

Mediator
             Effect   SE(Boot)   BootLLCI   BootULCI
Awkward      -.0345      .0445     -.1780      .0158
Compass      -.1235      .0805     -.3304     -.0055
TakeAdva     -.0127      .0296     -.1184      .0166

******************** INDEX OF MODERATED MEDIATION ************************

Mediator
              Index   SE(Boot)   BootLLCI   BootULCI
Awkward      -.0345      .0445     -.1780      .0158
Compass      -.1235      .0805     -.3304     -.0055
TakeAdva     -.0127      .0296     -.1184      .0166

******************** ANALYSIS NOTES AND WARNINGS *************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----
```

Simple parallel mediation model for each level of closeness.

```
restore.
USE ALL.
COMPUTE filter_$=(Closenes = 1).
VARIABLE LABELS filter_$ 'Closenes = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix Close only

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 4
    Y = PredRate
    X = Medium
   M1 = Awkward
   M2 = Compass
   M3 = TakeAdva

Sample size
         60

**************************************************************************
Outcome: Awkward

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .0774      .0060     3.0494      .3498     1.0000    58.0000      .5565

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.2333      .7129     4.5354      .0000     1.8063     4.6604
Medium        .2667      .4509      .5914      .5565     -.6359     1.1692

**************************************************************************
Outcome: Compass
```

```
Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .2419      .0585     1.1839     3.6039     1.0000    58.0000      .0626

Model
             coeff         se          t          p       LLCI       ULCI
constant    3.6667      .4442     8.2544      .0000     2.7775     4.5558
Medium       .5333      .2809     1.8984      .0626     -.0290     1.0957

************************************************************************
Outcome: TakeAdva

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1799      .0324     1.6839     1.9399     1.0000    58.0000      .1690

Model
             coeff         se          t          p       LLCI       ULCI
constant    1.4333      .5298     2.7056      .0089      .3729     2.4938
Medium       .4667      .3351     1.3928      .1690     -.2040     1.1374

************************************************************************
Outcome: PredRate

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4080      .1665     1.4698     2.7460     4.0000    55.0000      .0373

Model
             coeff         se          t          p       LLCI       ULCI
constant    3.9624      .7746     5.1156      .0000     2.4101     5.5147
Awkward      .1387      .0963     1.4403      .1554     -.0543      .3316
Compass      .2480      .1551     1.5987      .1156     -.0629      .5588
TakeAdva    -.1070      .1238     -.8637      .3915     -.3552      .1412
Medium      -.6860      .3293    -2.0833      .0419    -1.3459     -.0261

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
     -.6860      .3293    -2.0833      .0419    -1.3459     -.0261

Indirect effect of X on Y
            Effect    Boot SE   BootLLCI   BootULCI
TOTAL        .1193      .1771     -.1707      .5188
Awkward      .0370      .0776     -.0610      .2876
Compass      .1323      .1320     -.0237      .5448
TakeAdva    -.0499      .0748     -.3303      .0345

****************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
```

```
    95.00

------ END MATRIX -----


restore.
USE ALL.
COMPUTE filter_$=(Closenes = 2).
VARIABLE LABELS filter_$ 'Closenes = 2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix Acquaintance only

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 4
    Y = PredRate
    X = Medium
   M1 = Awkward
   M2 = Compass
   M3 = TakeAdva

Sample size
         60

**************************************************************************
Outcome: Awkward

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1026      .0105     2.7023      .6168     1.0000    58.0000      .4355

Model
```

```
              coeff         se          t          p       LLCI       ULCI
constant     4.1000      .6711     6.1093      .0000     2.7566     5.4434
Medium       -.3333      .4244     -.7853      .4355    -1.1830      .5163

************************************************************************
Outcome: Compass

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .3178      .1010     2.0057     6.5146     1.0000    58.0000      .0134

Model
              coeff         se          t          p       LLCI       ULCI
constant     5.5000      .5782     9.5126      .0000     4.3426     6.6574
Medium       -.9333      .3657    -2.5524      .0134    -1.6653     -.2014

************************************************************************
Outcome: TakeAdva

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .2531      .0641     2.6236     3.9704     1.0000    58.0000      .0510

Model
              coeff         se          t          p       LLCI       ULCI
constant     1.8333      .6613     2.7725      .0075      .5097     3.1570
Medium        .8333      .4182     1.9926      .0510     -.0038     1.6705

************************************************************************
Outcome: PredRate

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6039      .3647     1.2357     7.8942     4.0000    55.0000      .0000

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.1973      .8280     2.6537      .0104      .5379     3.8567
Awkward       .1914      .0925     2.0700      .0432      .0061      .3767
Compass       .3922      .1125     3.4880      .0010      .1669      .6176
TakeAdva     -.0942      .0951     -.9914      .3258     -.2847      .0963
Medium       -.1249      .3068     -.4072      .6855     -.7397      .4899

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
     -.1249      .3068     -.4072      .6855     -.7397      .4899

Indirect effect of X on Y
            Effect    Boot SE   BootLLCI   BootULCI
TOTAL       -.5084      .2248     -.9834     -.0958
Awkward     -.0638      .1132     -.4165      .0633
Compass     -.3661      .1799     -.8170     -.0947
TakeAdva    -.0785      .1085     -.4251      .0584

****************** ANALYSIS NOTES AND WARNINGS ************************
```

```
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----



restore.
USE ALL.
COMPUTE filter_$=(Closenes = 3).
VARIABLE LABELS filter_$ 'Closenes = 3 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix Stranger only

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 4
    Y = PredRate
    X = Medium
   M1 = Awkward
   M2 = Compass
   M3 = TakeAdva

Sample size
         59

**************************************************************************
Outcome: Awkward
```

```
Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1374      .0189     3.0294     1.0969     1.0000    57.0000      .2994

Model
              coeff         se          t          p       LLCI       ULCI
constant     4.7080      .7130     6.6030      .0000     3.2803     6.1358
Medium       -.4747      .4533    -1.0473      .2994    -1.3824      .4329

************************************************************************
Outcome: Compass

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .0994      .0099     1.7335      .5689     1.0000    57.0000      .4538

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.7586      .5394     6.9686      .0000     2.6786     4.8387
Medium       -.2586      .3429     -.7543      .4538     -.9452      .4280

************************************************************************
Outcome: TakeAdva

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .3545      .1257     2.3352     8.1933     1.0000    57.0000      .0059

Model
              coeff         se          t          p       LLCI       ULCI
constant     1.8943      .6260     3.0260      .0037      .6407     3.1478
Medium       1.1391      .3979     2.8624      .0059      .3422     1.9360

************************************************************************
Outcome: PredRate

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4534      .2056     1.5655     3.4930     4.0000    54.0000      .0131

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.8193      .8160     4.6806      .0000     2.1833     5.4552
Awkward      -.0542      .0998     -.5435      .5890     -.2544      .1459
Compass       .2903      .1317     2.2049      .0317      .0263      .5543
TakeAdva      .1129      .1134      .9955      .3239     -.1145      .3403
Medium      -1.0482      .3555    -2.9487      .0047    -1.7610     -.3355

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
    -1.0482      .3555    -2.9487      .0047    -1.7610     -.3355

Indirect effect of X on Y
             Effect    Boot SE   BootLLCI   BootULCI
```

```
TOTAL         .0793      .1725     -.2272      .4657
Awkward       .0258      .0762     -.0697      .2690
Compass      -.0751      .1160     -.4305      .0752
TakeAdva      .1286      .1303     -.0768      .4519

****************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00


USE ALL.
COMPUTE filter_$=(Closenes=3).
VARIABLE LABELS filter_$ 'Closenes=3 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Serial mediation model for each closeness group

Matrix Model 6 Stranger only

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 6
    Y = PredRate
    X = Medium
   M1 = TakeAdva
   M2 = Compass
   M3 = Awkward

Sample size
         59

**************************************************************************
Outcome: TakeAdva
```

```
Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .3545      .1257     2.3352     8.1933     1.0000    57.0000      .0059

Model
              coeff         se          t          p       LLCI       ULCI
constant     1.8943      .6260     3.0260      .0037      .6407     3.1478
Medium       1.1391      .3979     2.8624      .0059      .3422     1.9360

**************************************************************************
Outcome: Compass

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .2053      .0422     1.7069     1.2325     2.0000    56.0000      .2994

Model
              coeff         se          t          p       LLCI       ULCI
constant     4.0533      .5766     7.0297      .0000     2.8982     5.2084
TakeAdva     -.1556      .1132    -1.3738      .1750     -.3824      .0713
Medium       -.0814      .3639     -.2238      .8238     -.8103      .6475

**************************************************************************
Outcome: Awkward

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .3273      .1071     2.8572     2.1998     3.0000    55.0000      .0984

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.0365     1.0235     2.9667      .0044      .9853     5.0876
TakeAdva      .2660      .1490     1.7858      .0797     -.0325      .5645
Compass       .3107      .1729     1.7970      .0778     -.0358      .6572
Medium       -.6974      .4710    -1.4807      .1444    -1.6412      .2465

**************************************************************************
Outcome: PredRate

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4534      .2056     1.5655     3.4930     4.0000    54.0000      .0131

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.8193      .8160     4.6806      .0000     2.1833     5.4552
TakeAdva      .1129      .1134      .9955      .3239     -.1145      .3403
Compass       .2903      .1317     2.2049      .0317      .0263      .5543
Awkward      -.0542      .0998     -.5435      .5890     -.2544      .1459
Medium      -1.0482      .3555    -2.9487      .0047    -1.7610     -.3355

****************** DIRECT AND INDIRECT EFFECTS *************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
    -1.0482      .3555    -2.9487      .0047    -1.7610     -.3355
```

```
Indirect effect(s) of X on Y
           Effect    Boot SE   BootLLCI   BootULCI
Total:      .0793      .1725     -.2272      .4657
Ind1 :      .1286      .1303     -.0768      .4519
Ind2 :     -.0514      .0515     -.2355      .0037
Ind3 :     -.0164      .0437     -.1709      .0348
Ind4 :      .0030      .0086     -.0035      .0414
Ind5 :     -.0236      .1100     -.3268      .1557
Ind6 :      .0014      .0169     -.0166      .0634
Ind7 :      .0378      .0921     -.1009      .2939

Indirect effect key
 Ind1 :   Medium   ->       TakeAdva ->       PredRate
 Ind2 :   Medium   ->       TakeAdva ->       Compass  ->       PredRate
 Ind3 :   Medium   ->       TakeAdva ->       Awkward  ->       PredRate
 Ind4 :   Medium   ->       TakeAdva ->       Compass  ->       Awkward  ->
PredRate
 Ind5 :   Medium   ->       Compass  ->       PredRate
 Ind6 :   Medium   ->       Compass  ->       Awkward  ->       PredRate
 Ind7 :   Medium   ->       Awkward  ->       PredRate

******************** ANALYSIS NOTES AND WARNINGS *************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----



restore.
USE ALL.
COMPUTE filter_$=(Closenes=2).
VARIABLE LABELS filter_$ 'Closenes=2 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix Model 6 Acquaintance only

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 6
    Y = PredRate
    X = Medium
   M1 = TakeAdva
   M2 = Compass
   M3 = Awkward

Sample size
         60

**************************************************************************
Outcome: TakeAdva

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .2531      .0641     2.6236     3.9704     1.0000    58.0000      .0510

Model
              coeff         se          t          p       LLCI       ULCI
constant     1.8333      .6613     2.7725      .0075      .5097     3.1570
Medium        .8333      .4182     1.9926      .0510     -.0038     1.6705

**************************************************************************
Outcome: Compass

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4261      .1816     1.8580     6.3224     2.0000    57.0000      .0033

Model
              coeff         se          t          p       LLCI       ULCI
constant     5.9799      .5922    10.0977      .0000     4.7940     7.1658
TakeAdva     -.2618      .1105    -2.3690      .0212     -.4830     -.0405
Medium       -.7152      .3638    -1.9659      .0542    -1.4437      .0133

**************************************************************************
Outcome: Awkward

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .2962      .0877     2.5804     1.7954     3.0000    56.0000      .1585

Model
              coeff         se          t          p       LLCI       ULCI
constant     2.0270     1.1655     1.7392      .0875     -.3077     4.3618
```

```
TakeAdva      .1159      .1365      .8494      .3993     -.1575      .3893
Compass       .3383      .1561     2.1671      .0345      .0256      .6510
Medium       -.1142      .4430     -.2578      .7975    -1.0017      .7732

************************************************************************
Outcome: PredRate

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .6039      .3647     1.2357     7.8942     4.0000    55.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant    2.1973      .8280     2.6537      .0104      .5379     3.8567
TakeAdva    -.0942      .0951     -.9914      .3258     -.2847      .0963
Compass      .3922      .1125     3.4880      .0010      .1669      .6176
Awkward      .1914      .0925     2.0700      .0432      .0061      .3767
Medium      -.1249      .3068     -.4072      .6855     -.7397      .4899

****************** DIRECT AND INDIRECT EFFECTS *************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
     -.1249      .3068     -.4072      .6855     -.7397      .4899

Indirect effect(s) of X on Y
           Effect    Boot SE   BootLLCI   BootULCI
Total:     -.5084      .2248     -.9834     -.0958
Ind1 :     -.0785      .1085     -.4251      .0584
Ind2 :     -.0856      .0832     -.3529     -.0016
Ind3 :      .0185      .0297     -.0092      .1371
Ind4 :     -.0141      .0182     -.0990      .0000
Ind5 :     -.2805      .1573     -.6708     -.0367
Ind6 :     -.0463      .0477     -.2264      .0005
Ind7 :     -.0219      .1010     -.2990      .1294

Indirect effect key
 Ind1 :   Medium   ->       TakeAdva ->       PredRate
 Ind2 :   Medium   ->       TakeAdva ->       Compass  ->       PredRate
 Ind3 :   Medium   ->       TakeAdva ->       Awkward  ->       PredRate
 Ind4 :   Medium   ->       TakeAdva ->       Compass  ->       Awkward  ->
PredRate
 Ind5 :   Medium   ->       Compass  ->       PredRate
 Ind6 :   Medium   ->       Compass  ->       Awkward  ->       PredRate
 Ind7 :   Medium   ->       Awkward  ->       PredRate

****************** ANALYSIS NOTES AND WARNINGS *************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----
```

```
restore.
USE ALL.
COMPUTE filter_$=(Closenes=1).
VARIABLE LABELS filter_$ 'Closenes=1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
/* PROCESS for SPSS v2.13.2 */.
/* Written by Andrew F. Hayes */.
/* www.afhayes.com */.
/* Copyright 2015 */.
/* Documentation available in Appendix A of */.
/* http://www.guilford.com/p/hayes3 */.
preserve.
set printback=off.
```

Matrix Model 6 – Close only

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Release 2.13.2 **************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 6
    Y = PredRate
    X = Medium
   M1 = TakeAdva
   M2 = Compass
   M3 = Awkward

Sample size
         60

**************************************************************************
Outcome: TakeAdva

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .1799      .0324     1.6839     1.9399     1.0000    58.0000      .1690

Model
              coeff         se          t          p       LLCI       ULCI
constant     1.4333      .5298     2.7056      .0089      .3729     2.4938
```

```
Medium        .4667      .3351     1.3928      .1690     -.2040     1.1374

************************************************************************
Outcome: Compass

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .2618      .0686     1.1918     2.0979     2.0000    57.0000      .1321

Model
             coeff         se          t          p       LLCI       ULCI
constant     3.7909      .4730     8.0151      .0000     2.8438     4.7380
TakeAdva     -.0867      .1105     -.7848      .4358     -.3079      .1345
Medium        .5738      .2866     2.0024      .0500      .0000     1.1476

************************************************************************
Outcome: Awkward

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .3298      .1087     2.8319     2.2776     3.0000    56.0000      .0895

Model
             coeff         se          t          p       LLCI       ULCI
constant     1.1907     1.0633     1.1198      .2676     -.9394     3.3207
TakeAdva      .1167      .1712      .6816      .4983     -.2263      .4596
Compass       .5115      .2042     2.5051      .0152      .1025      .9205
Medium       -.0606      .4570     -.1326      .8950     -.9760      .8549

************************************************************************
Outcome: PredRate

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4080      .1665     1.4698     2.7460     4.0000    55.0000      .0373

Model
             coeff         se          t          p       LLCI       ULCI
constant     3.9624      .7746     5.1156      .0000     2.4101     5.5147
TakeAdva     -.1070      .1238     -.8637      .3915     -.3552      .1412
Compass       .2480      .1551     1.5987      .1156     -.0629      .5588
Awkward       .1387      .0963     1.4403      .1554     -.0543      .3316
Medium       -.6860      .3293    -2.0833      .0419    -1.3459     -.0261

****************** DIRECT AND INDIRECT EFFECTS ************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
     -.6860      .3293    -2.0833      .0419    -1.3459     -.0261

Indirect effect(s) of X on Y
           Effect    Boot SE   BootLLCI   BootULCI
Total:      .1193      .1771     -.1707      .5188
Ind1 :     -.0499      .0748     -.3303      .0345
Ind2 :     -.0100      .0255     -.1300      .0049
Ind3 :      .0076      .0168     -.0047      .0891
Ind4 :     -.0029      .0077     -.0502      .0011
```

```
Ind5 :      .1423      .1408     -.0264      .5721
Ind6 :      .0407      .0504     -.0036      .2393
Ind7 :     -.0084      .0799     -.2243      .1214

Indirect effect key
 Ind1 :   Medium   ->       TakeAdva ->       PredRate
 Ind2 :   Medium   ->       TakeAdva ->       Compass  ->       PredRate
 Ind3 :   Medium   ->       TakeAdva ->       Awkward  ->       PredRate
 Ind4 :   Medium   ->       TakeAdva ->       Compass  ->       Awkward  ->
PredRate
 Ind5 :   Medium   ->       Compass  ->       PredRate
 Ind6 :   Medium   ->       Compass  ->       Awkward  ->       PredRate
 Ind7 :   Medium   ->       Awkward  ->       PredRate

******************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

------ END MATRIX -----


restore.
```