Email Helping Behavior: The impact of recipient list size and urgency

by

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Email is commonly used to request help from numerous individuals at once by sending a single request to multiple recipients. Traditional helping behavior theories, however, assert that increasing group size actually decreases helping behavior—although this inverse relationship can be minimized by increasing the urgency of the helping situation. To examine this phenomenon in the context of emailing, emails with varying levels of urgency, addressed to either one or ten recipients at a time, were sent to 160 university students. While the results indicate that emails addressed to a single recipient yield more responses, it was found that the level of urgency has no bearing on the relationship between list size and response rate.
Introduction

For many people, email is an essential medium for communication. As of 2012, there were 3.3 billion email accounts registered worldwide and around 144.8 billion emails sent on a daily basis (Radicati & Hoang, 2012). Looking ahead to 2016, this number is only expected to increase. As one of the dominant forms of communication, it is important that the emailing communication process runs as efficiently and unbroken as possible. Of course, like all forms of communication, this system has flaws. One of these flaws is that emails are often deliberately ignored. Many times, these unanswered emails are those requesting some type of help (Anonymous, 2000; Grossnickle & Cope, 2004; Lewis, Thompson, Wuensch, Zhao, Kumar, & Stohr, 2000).

Email is an ideal medium for seeking information or assistance from others because the nature of emailing affords individuals the ability to communicate asynchronously, to store and keep track of messages easily and to communicate with a large group of people efficiently (Barron & Yechiam 2002). Considering these features that make emailing conducive for seeking help, it is no surprise that studies have found that a very high percentage of emails sent within organizational settings are help requests (Camino, Milewski, & Millen, 1998; Phillips & Eisenberg, 1993).

Unfortunately, the advantages that emailing provides individuals are often counterbalanced by the propensity for recipients to ignore these emails. On an individual level, this leads to inconvenience and annoyance, and simply represents a break in the communication process that needs mending. From a business and organizational standpoint, unanswered emails requesting help or information lead to decreased productivity and lower efficiency throughout
the workplace. It is important to examine why so many emails are ignored and work towards a more effective method for increasing email response rate.

The question of why so many emails are ignored may be answered by the logic behind traditional group and helping behavior theories. Classic helping behavior theories such as the diffusion of responsibility and the bystander effect suggest that the more people present when someone needs help, the less likely it is that someone will actually receive help (Latane & Darley, 1968; Mynatt & Sherman, 1975). This inverse relationship between group size and responsibility is further supported by social loafing literature, which posits that individuals exert less effort when working in groups (Comer 1995; Diehl & Stroebe, 1987; Mefo & Nwanosike, 2012). In an in-person environment it is consistently clear that increases in group size inhibit the helping behavior of individuals in that group. When applying these theories to emailing, it appears that this nonresponse phenomenon is a product of individuals passing off responsibility due to the presence of other recipients in the email listing.

With the emergence of increased online communication within the past few decades, numerous studies looking at the presence of these theories in several online contexts have emerged (Voelpel, Eckhoff, & Forster, 2008). Emailing, however, has been relatively neglected in this regards. Only a few studies have examined the role of the diffusion of responsibility in emailing, leaving uncertainty as to whether or not these theories actually apply, as well as room to explore these theories in a variety of different emailing situations. Two areas that have been unexplored are the effects that varying levels of urgency have on the relationship between group size and response rate and how these list sizes impact response rate in an emailing situation in which there is potential for future interaction between the sender and receiver. The aim of this current study is to investigate whether an increase in the number of recipients decreases the
number of responses in an emailing situation in which the recipients believe there is potential for in-person interaction with the sender. Additionally, this study focuses on how the level of urgency of the email request affects this relationship between recipient size and response rate.

The answers to these questions will expand the present knowledge of the intricacies of emailing as a communication medium. A greater understanding of the factors that affect the communication will aid in the development of more effective methods for inducing responses to email help requests and shoring up any potential faults in the current emailing methods being utilized.

**Literature Review**

**Diffusion of Responsibility and the Bystander Effect**

On March 27, 1964, 28-year-old Kitty Genovese was sexually assaulted and eventually stabbed to death for over 30 minutes, while 38 witnesses watched in silence. It was only after it was too late that one person decided to call the police (Rasenberger, 2007). At the time, people were appalled, even outraged, that a crowd of completely capable individuals chose not to act when another person was in need of emergency aid. Questions about the state of society arose, blaming the event on an erosion of societal morality. Some individuals, however, mainly social psychologists, countered these questions by begging a different one: what if it was not the callousness of the witnesses that led to their inaction, but the mere presence of multiple bystanders during the assault (Latane & Darley, 1968)?

Following the Kitty Genovese case in 1968, two social psychologists, John Darley and Bibb Latane in 1968, investigated whether the presence of multiple bystanders could indeed paralyze individuals into inaction. After conducting an experiment involving a staged emergency and several bystanders, the researchers determined that as the group size increased, the
likelihood for help response decreased. Darley and Latane speculated that this was due to a diffusion of responsibility, a diffusion of blame and the idea that when an individual has the knowledge that others are present in an emergency situation, that individual commonly “assumes” that someone else will provide help. Or, rather than assuming someone will provide help, individuals turn to convincing themselves that someone else is more capable of providing the necessary assistance.

Part of this convincing is accomplished by what is referred to as the social cueing theory (Latane & Darley, 1968). This theory proposes that for the diffusion of responsibility to take place individuals must assess the “cue value” of the other bystanders and use these cues to determine if these other individuals are capable of helping. Using this evaluation, individuals then decide that others are more capable of helping or have already begun helping. If this theory is looked at from an emailing perspective, it appears that individuals will assess the cue value of the other bystanders by passing judgment on the email addresses listed in the email (Barron & Yechiam, 2002). Of course, this cue value assessment is much more difficult in an email environment, where the presence of others is merely virtual and assumed, and accurately gauging the actions of others is troublesome, if not impossible.

Similar to this idea of responsibility diffusing amongst a group, researchers Bandura, Underwood and Fromson (1975) argued that the collective action of groups affords the individuals involved a level of anonymity, allowing them to avoid personal ownership for their decisions. They are able to attribute any actions or behavior to the other group members. When acting in a group setting, each individual shares the brunt of the consequence with others, thus mitigating the gravity of the consequence that is directed at one single individual. If this is
related to a situation where someone is in need of help, it would suggest that individuals assume that the punishment for their inaction will be minor, or there will be no punishment at all.

In an emailing context, this finding can be applied two ways. On one hand, many times, individuals feel a high sense of anonymity when emailing (Liu, Aggarwal & Duan, 2008). If you cast the ideas proposed by Bandura et al onto these situations, it suggests email recipients, who are just one of many receivers, are likely to assume the possibility of retribution for their actions or the psychological costs of inaction will be nonexistent. Of course, on the other hand, the idea that there will be no costs associated with inaction is likely to be voided when email recipients share an offline connection with the email sender. In an experiment examining the impact of empathy as a source for altruistic motivation, researchers found that when contemplating whether to help someone in need who is not currently present, individuals will be far more likely to provide assistance if there is potential that they may encounter that individual in-person sometime in the future (Toi & Batson, 1982).

Even if an individual does not fear the consequences of inaction in a scenario where someone is in need of help, that person may feel some personal moral obligation to help. However, the presence of others allows for a transfer of guilt amongst all people present, leading to inaction. Or as Garcia, Weaver, Moskowitz, and Darley (2002) put it “...diffusion of responsibility can be viewed as a means of reducing the psychological cost associated with non-intervention,” (p. 848). This ultimately removes any dissonance that an individual may feel for not helping when he or she believes that is the right thing to do.

Originally, the bystander effect focused solely on emergency situations. However, this theory has even been shown to be present in non-emergency situations (Levy, Lundgren, Ansel, Fell, Fink & McGrath, 1972). Levy et al tested the impact of group size on an individual’s
decision to allow someone, who was knocking on the door, into an experimental room. The results showed that the more people present, the less likely it was that someone would answer the door, suggesting that the bystander effect and diffusion of responsibility hold form in non-emergency scenarios. Clearly, the majority of time, email is used for non-emergency situations, making this finding crucial to building the argument that these theories can exist in an emailing context.

In fact, one study found that the presence of bystanders in a non dangerous emergency situation actually has a greater affect than it does in a dangerous emergency situation in influencing the likelihood that someone will intervene (Fischer, Greitemeyer, Pollozek & Frey, 2006). This opens up the possibility that these theories may have an even more pronounced effect in emailing situations, with emails typically consisting of requests of minimal importance comparative to true emergency situations. This research supports previous findings by Bickman and Kamzan (1973), who found that individuals in “high-priority” situations are more likely to receive help than those in situations of lesser priority, pointing to the fact that individuals can increase the likelihood of being helped by increasing the perceived level of priority of their situation. Any techniques that elevate the perceived level of priority are likely to reduce the role of the bystander effect or diffusion of responsibility (Lewis, Thompson, Wuensch, Grossnickle & Cope, 2004). This is ultimately due to the fact that in a situation of low perceived danger, after the costs of inaction are diffused amongst the group, the remaining cost felt by each individual is not great enough to compel anyone into action.

This notion is extremely relevant to emailing, as most email help requests are for non-emergency cases, however, individuals have the tools available to increase or decrease the perceived priority or urgency level of these non-emergency situations. An individual changing
the tone of the email request can easily manipulate the appearance of the priority level and in
effect distribute a greater sense of consequence to each email recipient, minimizing the diffusion
of responsibility and thus mitigating the bystander effect.

Social Loafing

This idea of responsibility dispersing throughout a group is not limited to situations
where another individual is in need of help or assistance. Diffusion of responsibility also applies
to the concept of social loafing—a term that refers to the phenomenon of individuals expending
less effort during group work than if they were alone (Mefoh, Nwanosike, 2012). Agricultural
engineer Max Ringelmann was the first researcher to provide evidence for this theory. By testing
the amount of effort put forth by individuals pulling a rope by themselves, with another person,
or with seven other people, it was found that as the number of people pulling the group went up,
the effort of each individual progressively declined. This established the idea that people don’t
maximize their potential in group work, because there is a freedom to rely on others (LaFasto &
Larson, 2001). In short, people working alone feel solely responsible for accomplishing a task,
while people working in groups feel this responsibility is shared (Comer, 1995). This suggests
that in instances even when an email does not specifically fall under the umbrella of a “helping
situation,” the recipient list size can nonetheless influence the behavior of each individual.

The economic theory of public goods provides an explanation for why this feeling of
shared responsibility leads to decreased personal effort (Diehl & Stroebe, 1987). This theory
proposes that an individual’s effort decreasing as group size goes up is due to both a decrease in
the “identifiability” of his or her contributions and a decrease in the “perceived effectiveness” of
his or her contributions. In other words, as the size of the group increases, people feel it is easier
to hide their contributions, or lack thereof, within the crowd, and they feel the value and
necessity of their own individual contributions decreases, giving them a feeling of dispensability. One way to counter social loafing is to increase the perceived accountability of one’s actions by making it easier to identify each individual contribution and increase the likelihood of retribution for each individual’s actions. Researcher Bibbe Latane found that holding individuals accountable for their contributions eliminates social loafing (Christopher, 1989). Based on this assertion, increasing the perceived accountability of one’s actions is especially important in emailing, where anonymity is already inherently high due to people’s perceptions of the email environment (Liu, Aggarwal & Duan, 2008).

Early studies merely focused on physical group tasks, but social loafing has been found to occur in cognitive tasks as well (Van Dick, Tissington & Hertel, 2009). In a brainstorming experiment, researchers found that participants provided more ideas when their individual contributions were being evaluated, than when it was known that the group’s contributions as a whole were being evaluated (Diehl & Stroebe, 1987). This is a prime example of the effects of increased accountability on helping behavior. Diehl and Stroebe’s claim that individuals provide more ideas when each individual’s input can be identified and judged lends support to the argument that the ability to pinpoint each recipient’s contribution in emailing provides a safeguard against social loafing. However, as previously mentioned, the same research indicates that an increase in group size decreases the “identifiability” of individuals (Diehl & Stroebe, 1987). This holds true regardless of the ease with which each individual contribution can be identified, as increasing group size makes the identifying and evaluation process more difficult.

**Applicability in Computer-Mediated Contexts**

While these studies and experiments all focus on the role of the bystander effect, diffusion of responsibility and social loafing in a physical, in-person context, there is also
literature that supports these phenomena in computer-mediated environments. Several studies have investigated multiple factors of the impact of virtual group size on helping behavior, including how group size impacts response rate.

When examining groups of moderate sizes, that is, group sizes of 250 and less, findings have been consistent with traditional offline research. However, for larger groups of 250 or more, the dynamic shifts. Sven Voelpe, Roebrts Eckhoff and Jens Forster (2008) tested for the affect of group size on response rate by posting a question in 333 different Yahoo! Groups, asking for assistance in uploading images. The results showed that an increase in group sizes from small groups (0 - 99) to medium groups (100 - 250) significantly lowered the likelihood that someone would provide help. Another earlier study conducted by researcher P.M. Markey (2000), which explored this issue in a chat group setting, found that the more people present in the chat group, the less likely it was that any help would be received. The groups in this experiment ranged from two to 19 individuals. Both of these findings suggest that for groups of 250 individuals and less, the diffusion of responsibility and bystander effect continue to have an influence in an online environment.

Sven et al (2008) also found, however, that as the group size increased from medium (100 – 250) to large (251-500) to very large (500 – 10,523) the likelihood of receiving a response actually increased, contrary to what the diffusion of responsibility suggests. In short, it was determined that the bystander effect no longer played a role once the group size reached a critical level of 250 members. This suggests that there is not a perfect inverse relationship between group size and response rate. This nonlinear relationship is likely to be amplified in emailing, because individuals are typically not cognizant of the precise number of other recipients. While a large difference in group size might be readily apparent by glancing at the recipient list, smaller
differences (e.g. 25 versus 30) or differences between list sizes of greater scales (e.g. 50 versus 100) are much more difficult to recognize by referring to the recipient list.

**Differences in Emailing**

Despite the countless amount of research supporting the theories under investigation and the seemingly straightforward applicability of these theories to emailing, online-specific perceptions construct a completely new communication dynamic, not present in offline interactions. So while it may be acutely evident that increases in group size decrease the helping behavior of those present in an offline context, it is nonetheless essential that researchers explore the applicability of these theories with the realities of emailing. There are a number of particular and explicit differences between emailing and face-to-face communication that could result in the nullification of these traditional theories in an emailing situation.

One of the most prominent variations is seen in the actual knowledge that each individual has in regards to the presence of others (Blair, Thompson & Wuensch, 2005). In emailing, individuals must only assume whether or not others have received the message. Individuals may question if those listed in the recipient list actually saw the email. Many times, this is not the case in face-to-face helping situations, as the presence of others is generally visibly apparent. Along these same lines, the ability for individuals to use others’ actions as a cue for their own behavior is not present in emailing, because individuals cannot see how others are responding to the email message (Latane & Darley, 1968). The “reply all” feature further complicates this because people may assume that because they have not been forwarded a response, nobody has responded to the request.

The asynchronous nature of emailing adds to this confusion. Individuals who constantly check their email may receive an email quickly and assume that they have the first opportunity to
respond to the request. On the other hand, individuals that do not check their email daily may believe that because the message is older it has already been attended to by one of the other recipients (Blair, Thompson & Wuensch 2005).

Moreover, there is a clear distinction between an in-person helping situation and an emailing situation, in that, when emailing, the person in need directs his or her request towards an individual more explicitly than in an in-person setting. Cases such as the Kitty Genovese stabbing illustrate this difference. Rather than specify from whom she wanted help, she could only be heard screaming, indicating a general need for assistance from anyone within earshot. When sending a help request in emailing, individuals in need specifically and explicitly direct their requests to individuals via the “recipient” line. It seems to follow that a stronger link between the potential helper and the individual in need, as well as a greater sense of “identifiability,” is formed (Diehl & Stroebe, 1987).

Experiments Studying Diffusion of Responsibility in Emailing

There is a short list of academic studies that have investigated the diffusion of responsibility in emailing. A general consensus as to whether or not this theory plays a role in emailing remains to be seen, as the results have been inconsistent, with two studies finding significant results and another failing to do so (Barron & Yechiam 2002; Lewis, Thompson, Wuensch, Grossnickle & Cope, 2004; Blair, Thompson & Wuensch, 2005).

All of the studies conducted were executed via experiments in which the researchers sent out emails, while posing as either a university student or prospective university student, asking for assistance with a fictional problem. The email help requests disseminated in each study were all non-emergency, low-urgency requests sent out to randomized samples of university students or university students, staff and faculty.
Various elements of the diffusion of responsibility have been examined by each study. In 2002, among other aspects of this theory, Barron and Yechiam tested to see if Latane and Darley’s social cueing theory that suggests individuals assess the cue value—or the perceived ability of others to help in a particular situation—is a factor in emailing. The researchers adjusted the email address types in the “to:” line of the email to indicate that some individuals were more capable of answering the proposed question (i.e. an individual with an institutional address, in theory, would be viewed as more capable of answering a university-focused question than an individual with a generic email address). While they did conclude that the diffusion of responsibility was present by manipulating the list size, they did not find that the ability for the “virtual bystanders” to help was assessed by looking at the email address name. Instead, they concluded that individuals assumed that the other recipients listed in the “to:” line of the email were capable of helping by virtue of these recipients being contacted by the individual sending the email.

Based on previous bystander effect research that demonstrated the level of urgency moderates the relationship between group size and helping behavior, researchers Lewis et al examined if this held true in an emailing context. Using the priority symbol (!) in Microsoft Outlook the priority level of the email requests was adjusted. In contrast to what traditional research suggests, no significant evidence was found that indicated any moderating effect was present.

While each study looked at recipient list size and the number of responses, researchers in the Blair et al (2005) study took it one step further by looking at whether or not the number of responses was an exact inverse function of the number of email recipients. Subjects were assigned to groups in which they would believe they were the only recipient, one of two
recipients, one of 15 recipients or one of 50 recipients to have received the email request. The results showed that the single recipient condition and the two recipient condition yielded statistically similar rates and types of responses. Similarly, the 15 and 50 recipient conditions yielded statistically similar results. They did find, however, that as the group size increased from the one and two recipient list sizes to the 15 and 50 recipient list sizes there was a decrease in helping behavior, showing that increasing group size decreases helping behavior, but not as a direct inverse function.

Each study focused on a variety of factors and emailing situations, but there are still a number of factors and constraints that have yet to be taken into account.

**Adding to Current Research**

All of these studies focused on experiments that provided the subjects a high degree of anonymity and low degree of accountability. The subjects didn’t know the person contacting them, and it is reasonable to believe that the subjects assumed they would never encounter this person in an offline environment or have to deal with the consequences of not responding. This may be the case in many emailing situations, and definitely could be the case in an in-person setting, but often times emails are sent inter-office and between co-workers or classmates. The likelihood that one might encounter this person and be held accountable for their own actions or reminded of their decision not to help is often higher in these organizational settings.

This lack of future interaction is likely to substantially enhance the bystander effect, or in terms of social loafing, an individual’s perceived ability to be lost in a crowd. Bandura et al (1975) proved that the threat of consequence is a significant factor in the bystander effect, as people are less likely to help if they cannot be punished for their inaction. Additionally, social psychologist Bibbe Latane explained that holding individuals accountable for their contributions
in a group setting can eliminate the effects of social loafing (Christopher, 1989). Moreover, researchers from the Lewis et al (2004) study looking at the relationship between list size and response rate encouraged future research to investigate exactly this notion, saying “… the anticipation of future interaction with either the help seeker or fellow bystanders may moderate the effects of others on virtual helping behavior…” (2005, p. 176). In fact, previous studies have specifically shown that the potential for future interaction increases helping behavior based on several factors: it increases the likelihood of consequence and it increases the likelihood that the potential helper will be reminded of the other individual’s unmet need if help is not given (Toi & Batson, 1982).

For these reasons it is important to conduct an experiment that accounts for this element by constructing an emailing situation in which recipients have some sense of the potential for offline interaction with the sender. Even if this variable is not manipulated, it nonetheless provides an alternate setting in which to execute this type of study.

A common research constraint, which none of the studies completely or clearly minimized, is the notion that when an individual receives an email that could be addressed to people other than themselves, there is no way of knowing if that individual truly believes that he or she is the sole recipient. It is important that this potential confounding factor is protected against by explicitly telling the single recipients in the study that they are the only recipients and give them a direct reason to believe this. This constraint is clearly explained by researchers in the Blair et al (2005) study saying, “Consequently, whereas individuals singled out in a face-to-face manner typically know they are alone, their online counterparts may doubt whether they are truly unaccompanied.” (p. 173). The researchers from the Lewis et al (2004) study also discuss this as a possible reason as to why they did not obtain any significant results. They suggest that because
the subjects were aware that the researchers needed multiple respondents for the survey, it was likely that this awareness caused the subjects to assume the email was sent to other recipients, regardless of what the recipient list size indicated.

A constraint which the study by Barron and Yechiam (2002) failed to account for is the idea that all the recipients have a truly equal ability to respond to the request. The researchers attempted to address this by asking a question which the researchers deemed “general knowledge” for anyone at the institute. This, however, doesn’t adequately cover this problem because some recipients might have direct experience with the biology facility in question, while others may have no knowledge whatsoever. It is important to control this factor; otherwise subjects more capable of helping will be more likely to respond than those who are less capable.

Additionally, none of these studies adequately addressed the impact of the level of emergency or sense of urgency on the relationship between the list size and response rate. None of the questions or requests that were asked carried an explicitly time sensitive request. Often times, in academic and professional settings, emails are sent out which need to be responded to in a timely fashion. Therefore, the effect of the level of urgency is an important point of discussion in regards to the diffusion of responsibility in emailing.

**Research Hypotheses**

Ultimately, this study examines the relationship between recipient list size and the number of helpful responses, as well as the effect of the level of urgency on this relationship. These topics are of considerable interest based on the logic of traditional helping behavior theories and the evidence provided by corresponding studies. While there has been much research dedicated to exploring these helping theories in a real-world context, less effort has been put forth in investigating their applicability in emailing, meaning there is ample room to not
only look at the diffusion of responsibility, bystander effect and social loafing in different emailing situations, but also examine additional factors such as the level of urgency. As such, the aim of this current study is to investigate whether an increase in the number of recipients decreases the response rate and whether or not the level of urgency of the email request affects this relationship. To direct this investigation the following research hypotheses are proposed:

H₁: As the number of email recipients known to each recipient increases, the number of helpful responses will decrease.

H₂: The level of urgency of the email request will moderate the relationship between the recipient list size and the number of helpful responses. That is, the inverse relationship between the recipient list size and the number of helpful responses will be weakened as the urgency level increases.

Methodology

Study Design

To test these hypotheses a 2 x 2 factorial design experiment was conducted. The general design of the study followed that of previous studies, calling for the researcher to pose as a student at the Rochester Institute of Technology who was seeking assistance for a fictional problem via email. To increase the sense among the recipients that there was potential for future in-person interaction with the sender—and thus making the environmental setting more natural—the researcher pretended to be a classmate of each subject in the experiment.

A few of the previous studies failed to guarantee that every subject was equally capable of responding to the request. To control for this, each student was asked for an electronic version of the course syllabus—something that every student enrolled in a class at the Rochester Institute of Technology can access. Specifically, the email explained that the fictitious student’s
myCourses account (an online resource for students at the Rochester Institute of Technology where students can view and download course material) is not letting him log in, so he could not access the syllabus (refer to Appendix A, B, C and D for the actual email content). When choosing the classes to be used for the sample it was first confirmed that the professor uploaded the course syllabus to myCourses, so that every subject in the sample had access to the syllabus.

In total, the experiment consisted of 160 students from the Rochester Institute of Technology. The subjects involved in the experiment were limited to students enrolled in class sizes containing 80 students. These class sizes were chosen, because class size could be a confounding variable in the research and it was important to hold this variable relatively constant. Specifically, it was assumed that students in classes with the same class sizes would feel an equal level of perceived accountability towards their classmates, even if they didn’t recognize a classmate’s name. Students in class sizes that are too different (e.g. 50 students versus 15 students) might have had varying levels of perceived accountability towards other students in their class. Furthermore, students from two separate Introduction to Philosophy classes were used, as these classes are commonly taken as institute wide electives from a variety of majors and year levels. This diverse sample increased the generalizability of the sample results.

Class sizes of 80 students also reduced the possibility of the subjects recognizing that the researcher was not a fellow classmate. It is impractical to assume that students have a familiarity with every member of a class size of 80 students and over. However, the possibility that the subjects could have discovered that the researcher was not a classmate could not be discounted, as students could access the class list on the RIT myCourses application if they had any doubts
about the legitimacy of the email or the sender. As such this possibility was recognized and controlled as best as possible by using large class sizes.

**Study Procedures**

The 160 student sample was randomized and broken down into four separate groups: Single Non-Urgent, Single Urgent, Multiple Non-Urgent, and Multiple Urgent. The emails were sent between 2:29 am and 2:40 am on a Monday, in order to reach the subjects before they checked their emails in the morning. Three days were allowed to pass before the responses were no longer recorded, because it was assumed that after three days, every subject who wanted to respond would have done so. Whenever an email was received, it was marked down and the email address was coded as an arbitrary number so it could not be identified in the final results, assuring the confidentiality of each subject’s data. Additionally, the actual email content was noted in the results to provide more context with which to examine the results.

A response email was sent back to each subject contacted in the study, debriefing them on the study and allowing them to remove their results (Appendix E). Many respondents replied and voluntarily offered more insight as to why they may or may not have responded, revealing additional context to be used for the interpretation and analysis.

Any subject that indicated he or she was no longer a member of the class (i.e. dropped) was eliminated and any subject that indicated he or she recognized that the researcher was not a member of the class was also removed from the results. Any subject that said he or she would help later was deemed an individual who intended to help, so his or her response was marked as a helpful response.
Independent Variables

The first independent variable used was how many people each recipient believed to have received the email request. This variable was manipulated by sending the email request to either a single recipient (Single Non-Urgent and Single Urgent group) or to a recipient with nine other fictional email addresses listed in the “to:” line (Multiple Non-Urgent and Multiple Urgent group). The nine other email addresses listed in the “to:” line were email addresses from RIT students who were previously briefed on the study and agreed to have their emails used for the purposes of the experiment. This was done to avoid the possibility of a recipient hitting “reply all” and in effect tarnishing the study. Additionally, in the actual email content it was made clear how many people received the message using phrases such as “one of the 10 of you” or in the case of the individual recipient saying, “I could only find your email.”

The second independent variable, the level of urgency of the request, acted as a possible moderator to the relationship between group size and response rate. To adjust this variable two different email types were disseminated: urgent and non-urgent. To control the urgency level of the email the tone and language of the two email types was varied to either increase or decrease the sense of urgency associated with the request, adding words and phrases such as “ASAP” and “I really need” (Appendix A, B, C and D).

Dependent Variable

The only dependent variable measured was the number of helpful responses for each of the four groups. A “helpful response” was defined as any email response containing an attached version of the course syllabus, any equivalent information to that of the course syllabus or any email that indicated that individual planned on helping later (e.g. I’ll send it to you later today).
Ultimately, the results were broken down into helpful, no response and unable to help (e.g. I dropped the class).

**Results**

Three days were given for the 160 subjects to respond. The first day yielded 57 responses, the second day yielded 2, and no subjects responded on the third day. After the three days, any subject that did not respond was placed in the “no response” category. Following the “helpful response” definition discussed in the “Methods” section, any subject that responded with the course syllabus attached, placed the syllabus into the email itself, or implied that he or she was willing to help once that individual could find the syllabus were deemed “helpful responses.” Only two subjects needed to be eliminated from the study, dropping the total sample size down to 158 subjects. One subject explained that he had dropped the class earlier in the quarter and another student realized that the researcher was not an actual classmate.

Table 1 shows the overall proportion of responses and nonresponses for each experimental condition. As indicated in the table, the “Multiple Non-Urgent” condition produced the lowest response rate at 10.3%, while the “Single Non-Urgent” produced the highest response rate at 55.0%. Overall, 37.3% of the subjects responded to the email with a “helpful response.” Figure 1 provides a clearer visual representation of the proportion of the rate of helpful responses based on the experimental groups.
To address the first hypothesis predicting that as the number of email recipients known to each recipient increased, the number of helpful responses would decrease, the “Single Non-Urgent” and the “Single Urgent” groups were aggregated into one “Single” group, and the “Multiple Non-Urgent” and the “Multiple Urgent” groups were aggregated into one “Multiple” group. Figure 2 displays the proportions of helpful responses for the two groups. Only 16 (20%) of the 79 subjects who believed they were one of ten recipients responded, while 43 (54%) of the 79 subjects who believed they were the only recipient responded.
Figure 2. Proportion of helpful responses for the “Single” and “Multiple” groups

Figure 2 appears to show that the size of the list lowers the rate of helpful responses. A comparison of two proportions was performed to test if the proportion of helpful responses for the “Multiple” group was indeed significantly lower than that of the “Single” group. The test confirmed the hypothesis ($Z = 4.44, P = 0.000$), indicating that as the recipient list size increased, the number of helpful responses decreased.

A main effect and interactions plot was created to aid in the analysis of the second hypothesis predicting that the inverse relationship between the recipient list size and the number of helpful responses would be weakened as the urgency level increased. This plot is shown in Figure 3.

Figure 3. The effect of list size and urgency level on response rate
The plot shows that the urgency level had little effect on the response rate for the single recipients, but for the multiple recipients, as the urgency level increased, the response rate did as well. To further clarify this finding, it can be observed that the slope of the “urgent” line is not as severe as the slope of the “non-urgent” line. This seems to suggest that the second hypothesis stating that the inverse relationship between list size and response rate would be weakened by increased urgency is accurate. Contrary to what was expected, an ANOVA test revealed that the urgency did not moderate the relationship between list size and response rate ($F(1, 79) = 2.102, P = 0.149$). However, while the interaction did not reach the standard level of significance of .05, it is worth noting that with a p-value of .149 the interaction was slight—just not enough to be considered significant.

**Discussion**

The present study investigated if as the number of recipients known to each email recipient increased, the number of helpful responses would decrease, and whether the level of urgency of the email would moderate this relationship by lessening this predicted inverse function. The results indicated that subjects who believed they were the sole recipient of the help request responded more frequently than subjects who believed they were one of ten recipients. In other words, the knowledge of multiple recipients inhibited the act of providing a helpful response. This indication supports traditional helping behavior theories, particularly the diffusion of responsibility, showing that helping behavior is reduced by group size (Latane & Darley, 1968; Mynatt & Sherman, 1975). However, the results failed to support the notion that urgency minimizes the negative impact of group size on response rate. This is inconsistent with previous findings that show the diffusion of responsibility is heightened as the degree of urgency and priority decrease (Fischer, Greitemeyer, Pollozex & Frey, 2006; Bickman & Kamzan, 1973).
One important conclusion that can be drawn from these findings is that email recipients view additional email recipients as bystanders, which in turn prompts a diffusion of responsibility (Barron & Yechiam, 2002). Several responses, including a follow-up response to the debriefing message, provide additional insight into this conclusion. One subject apologized for not responding sooner saying, “I must apologize I did not realize this was directly to me. It is in the attachment.” Another individual explaining why he did not respond to the email message said, “... since you emailed so many people I figured somebody else sent you the email.” It is also evident that individuals recognized the other recipients as capable bystanders. This recognition is critical to the diffusion of responsibility and bystander effect, as individuals must believe others are capable of helping in order to pass off their own responsibility (Latane & Darley, 1968). The assessment of how capable each bystander was, or the cue value, was most likely established by the fact that the researcher stated that the other recipients were also enrolled in the class and therefore had access to the syllabus.

These findings have numerous practical implications. Whether for academic, personal, organizational or other business purposes, the results of this study provide a useful guideline for utilizing email effectively and yielding the best response rate. As a way of reducing the diffusion of responsibility, when requesting assistance or information from many individuals, it is wise to email each individual separately, rather than all at once. This will reduce the likelihood that the recipients will assume others have helped. Additionally, it will minimize the probability that each individual will believe they can hide their contributions behind the wall of anonymity afforded to them by being a part of a group, which, as mentioned by Diehl and Stroebe (1987), is a key factor in preventing social loafing. Moreover, when sending emails to each recipient separately, senders will benefit from not providing any indication that the message was sent to
other individuals, as this knowledge will introduce a diffusion of responsibility. Even in situations where the recipients feel a sense of accountability, that is, they could be held accountable for their actions because they may encounter the sender in person, these guidelines still apply.

Marketers involved in sending impersonal email blasts may also benefit from this knowledge. Handpicking narrower target groups and explaining in the email that the individuals contacted were one of only a few, may produce higher response rates than emails which are clearly sent to larger groups.

It is unclear why urgency did not act as a moderator in the relationship between recipient list size and the number of helpful responses. One possible explanation could be that the urgency manipulation used in the study was not enough to create two groups of differing urgency. If the predicted moderating variable did not actually vary, it would be impossible to find significant evidence for a moderating effect. This is similar to the Lewis et al (2004) study which attempted to manipulate urgency by simply adding the high priority symbol available in Microsoft Outlook. In the current study and the Lewis et al study this failure to create a distinctively different urgency or priority level may be the actual reason neither study produced significantly findings in this regard.

If, however, the urgency gap was large and clear enough, the fact that the level of urgency did not lessen the inverse relationship between group size and response rate is important to note. This finding seemingly contradicts previous findings by Fischer et al (2006), stating that bystanders are more responsive in situations of higher emergency. However, this difference could be attributed to the fact that Fischer et al focused on dangerous emergency situations, whereas this current study looked at mundane, non emergency situations. The resulting
conclusion is that the diffusion of responsibility can be lessened by an increase in the level of perceived danger of an emergency, but will not be effective in “normal” non-dangerous helping situations.

What this means in the context of emailing is that even when individuals send a high priority or urgent request, if there is no implication of danger, then the diffusion of responsibility will still occur as if there was no urgency at all. Following this line of thinking, it is beneficial for any non-emergency request to be sent to every recipient independently, as to avoid the negative effects of group size on response rate.

This study was constrained by several factors, beginning with the nature of the sample population. Considering the sample only consisted of university students who all believed they were classmates of the sender of the help request, it is unclear if the findings are generalizable to a different population or setting, such as an office full of employees. Furthermore, what held true in this particular experimental setting where the subjects felt a somewhat personal connection to the sender, may not hold true in an impersonal environment where the sender and receivers have no connection to each other.

It is also possible that, in an age of spam and malware, the email request aroused some skepticism which may have confounded the results (Liu, Aggragal & Duan, 2009). Some individuals might not have responded because they realized that the researcher was not actually a classmate. This speculation was confirmed by one subject who was eliminated from the study. This subject replied to the email saying, “I don't see your name on MyCourses nor some of the other people that are in this email, so I'm pretty confused as to how I popped up.”

Another potential confound may have come as a result of the varying class times for the two classes that were used for the study. One Introduction to Philosophy class was on a Monday
and the other was on a Tuesday. This variation in class time could have impacted the investigation of urgency as a moderating factor. For instance, subjects in the Monday class may have perceived the email as more urgent, because the message was sent out early Monday morning, right before class. These subjects could have assumed the request was meant to be answered before the class and was therefore very urgent, while the subjects enrolled in the Tuesday class felt less urgency because an immediate response was not necessary. Alternatively, the subjects from the Monday class may have already attended the class before checking their email and figured a response was either too late or no longer necessary. The idea that it was too late to respond is a direct example of the possible impact of the asynchronous nature of emailing articulated in the Lewis et al (2005) study.

Lastly, some of the subjects may have never opened the email in the first place, assuming—based on the subject title—it was sent to the entire class. One subject who responded expressed this possibility explaining, “Sorry if this is too late - I didn't look at the email immediately when I got it because I'd assumed from the subject line that it was going to the whole class.”

Future studies would benefit from finding ways to limit these possible constraints and confounding factors involved in this particular experiment. One way to answer the question of whether or not the results from an experiment involving subjects who have a sense of accountability can be generalized, would be to make accountability a variable. How the possibility of future in-person interaction between the sender and the recipient effects the diffusion of responsibility is worthy of investigation.

It is also important that more studies examine the role of the diffusion of responsibility in emailing by executing an experiment in which the number of recipients is not explicitly stated
within the body of the email. While this information may be expressed within the email content for an email that was truly sent to a single recipient, many times, the recipient can only rely on the recipient list size and other less explicit cues to determine how many other people received the request.

This study brings to light only a small, but nonetheless meaningful, piece of knowledge that can be used to ensure increased efficiency and email effectiveness. Understanding that increasing the recipient list size decreases the response rate, and that the level of urgency has no effect on this relationship, suggests the importance of sending out requests for help and information individually rather than filling the “to:” line with multiple recipients. This is just one aspect of emailing. Many more areas within the email context remain untouched and ripe for investigation.

As new communication platforms continue to progress and new, never-before-seen communication technologies become available, it is important that more traditional online forms of communication are not pushed out of the realm of research simply because they are old news. Emailing continues to be a vital form of communication, and recognizing and investigating ways to improve this medium remains ever-important.
Appendix A
Email Type A (Single Non-urgent)

Intro to Philosophy (0509-210): Help

Hi,

I need to look at the course syllabus for philosophy, but for some reason my myCourses isn’t letting me log in to view it. Any chance you could attach the syllabus to an email and send it to me? I wanted to email everyone in the class for help, but I could only find your email. Anyways, I’d really appreciate it if you could send it to me.

Thanks,
Andrew

Appendix B
Email Type B (Single Urgent)

Intro to Philosophy (0509-210): Please Help ASAP

Hi,

I really need to look at the course syllabus for philosophy as soon as possible, but for some reason my myCourses isn’t letting me log in to view it. Any chance you could attach the syllabus to an email and send it to me? I wanted to email everyone in the class for help, but I could only find your email. Anyways, I’d really appreciate it if you could send it to me. Hopefully, you can help me out soon.

Thanks,
Andrew

Appendix C
Email Type C (Multiple Non-urgent)

Intro to Philosophy (0509-210): Help

Hi everyone,

I need to look at the course syllabus for philosophy, but for some reason my myCourses isn’t letting me log in to view it. Any chance one of the 10 of you could attach the syllabus to an email and send it to me? I wanted to email everyone in the class for help, but I could only find your guys’ emails. Anyways, I’d really appreciate it if one of you could send it to me.

Thanks,
Andrew
Appendix D
Email Type D (urgent)

Intro to Philosophy (0509-210): Please Help ASAP

Hi everyone,

I really need to look at the course syllabus for philosophy as soon as possible, but for some reason my myCourses isn’t letting me log in to view it. Any chance one of the 10 of you could attach the syllabus to an email and send it to me? I wanted to email everyone in the class for help, but I could only find your guys’ emails. Anyways, I’d really appreciate it if one of you could send it to me. Hopefully, someone can help me out soon.

Thanks,
Andrew

Appendix E
Debriefing Email

Thank you for your response,

My name is Andrew Rice, and I am a communication student currently conducting my senior thesis looking at the affects of recipient list size and urgency on email response rates.

You are one of 160 other students who I have sent an email to asking for the course syllabus for a course that I am not actually enrolled in. The reason I could not inform you that it was a part of an experiment was because I needed to make sure you were making a natural decision as to respond or not without the knowledge that it was not a real request.

Your data will remain confidential and the results of the study will be published anonymously as group data. Your email, name and any other information will not be used. I am simply using your response as part of a percentage to determine response rate.

If you are not comfortable with having been a part of this study, you are free to withdraw your data from the sample by sending me a response email requesting to be removed.

If you are interested in the results of the study, feel free to contact me at asr2798@rit.edu and I will provide you a summary of the findings upon completion.

Thank you again,
Andrew Rice
References


