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# Communicating With the Crowd: Speakers Use Abstract Messages When Addressing Larger Audiences

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Audience characteristics often shape communicators' message framing. Drawing from construal level theory, we suggest that when speaking to many individuals, communicators frame messages in terms of superordinate characteristics that focus attention on the essence of the message. On the other hand, when communicating with a single individual, communicators increasingly describe events and actions in terms of their concrete details. Using different communication tasks and measures of construal, we show that speakers communicating with many individuals, compared with 1 person, describe events more abstractly (Study 1), describe themselves as more trait-like (Study 2), and use more desirability-related persuasive messages (Study 3). Furthermore, speakers' motivation to communicate with their audience moderates their tendency to frame messages based on audience size (Studies 3 and 4). This audience-size abstraction effect is eliminated when a large audience is described as homogeneous, suggesting that people use abstract construal strategically in order to connect across a disparate group of individuals (Study 5). Finally, we show that participants' experienced fluency in communication is influenced by the match between message abstraction and audience size (Study 6).

*Keywords:* construal level, audience size, audience tuning, message framing

The proliferation of communication methods and devices has made it ever easier to connect with small and large audiences alike. From cell-phones to e-mail, personal websites to blogs, Twitter to Facebook, we are more and more able to communicate with diverse audiences, people we know and people we do not, single individuals and large groups. This ability is unprecedented and raises a host of questions about whether (and if so, how) we tailor our messages to the anticipated audience. In this article, we focused on one important slice of this larger question, asking whether communicators frame messages differently when their anticipated audience is a single individual or a larger number of people. Given our previously inconceivable ability to communicate with so many other people, understanding how our communications might be influenced by audience size is an increasingly relevant concern.

Past research has shown that audience characteristics may influence communicators' messaging; for example, research on audience tuning (Echterhoff, Higgins, & Groll, 2005; Fussell & Krauss, 1989) suggests that communicators frame messages so that

they are consistent with the attitudes and beliefs of their audience, an effect that may be augmented or attenuated under some conditions (e.g., a match or mismatch between status of the audience and communicator; Echterhoff, Lang, Kramer, & Higgins, 2009). Yet, the important question of how message framing may be influenced by physical characteristics of an audience, such as whether the audience consists of a single individual or many individuals, has been largely neglected in previous research (for one notable exception, see Gardner & Martinko, 1988, who, while exploring impression management in organizations, found that communicators represented themselves and their organizations more positively when speaking to many individuals).

In the current research, we drew on construal level theory (CLT; Trope & Liberman, 2010) and argue that communicators adopt a higher level or abstract construal when communicating with many individuals as opposed to a single individual. Two lines of converging rationale led us to expect these results: (a) Communicating with a larger audience challenges the speaker to adopt a universal perspective, which is facilitated by abstraction (Ledgerwood, Trope, & Liberman, 2010), and (b) larger audiences are associated with greater social and spatial distance, which tend to be associated with abstract construal (Trope & Liberman, 2010). In the following, we first briefly review previous research on predictors of abstraction in communication and then describe in more detail the construal-level framework and our reasons for expecting differences in abstraction when communicating with different size audiences.

## Abstraction in Communication

Several lines of previous research have examined characteristics of a speaker and an audience that are likely to influence the use of abstraction in communication. For example, Beukeboom (2009)

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suggested that speakers are more likely to use abstract language when communicating information to individuals who are in a positive mood, possibly because a smiling audience primes the speaker to feel happy, a characteristic associated with abstract and global information processing. When communicating with individuals in a negative mood, speakers use more concrete framing to convey information.

Communicators' goals and motives may also influence their use of abstract language (Douglas & Sutton, 2003, 2010; Fiedler, Bluemke, Friese, & Hofmann, 2003), such that communicators who are driven to portray themselves or others in a positive light increasingly describe their positive behaviors in abstract, situation-consistent ways. Similarly, when individuals are motivated to describe others in a negative light, they describe their negative behaviors using abstract language, thereby suggesting that the negative actions reflect traits of the individual rather than characteristics of the situation. A common manifestation of this phenomenon has been termed the *linguistic intergroup bias*, by which higher levels of abstraction are used when communicating positive ingroup behaviors and negative outgroup behaviors (Maass, Salvi, Arcuri, & Semin, 1989).

The motivational goal of being liked by their audience can also influence the level of abstraction at which communicators describe aspects of themselves that they expect their audience to approve or disapprove of, with concrete descriptions of such self-aspects providing the opportunity of more contextualized disagreement (Rubini & Sigall, 2002). Communicators' expectancies likewise shape the use of abstraction in communication (Maas et al., 1989), such that expectancy-violating actions are described concretely, whereas expectancy-confirming actions are framed abstractly.

Expanding on this previous research, we explored audience size as an additional factor that influences communication abstraction. Our central argument in the current article is that when encountering a large audience, communicators increasingly frame their messages abstractly, focusing on the gist and superordinate characteristics of the information. Faced with an audience of a single individual, communicators frame messages in more concrete terms, focusing on details and subordinate characteristics. We drew these predictions from construal-level theory, a recent framework that we describe in more detail in the following.

### Audience Size and Abstraction

Construal-level theory is a recently developed theoretical approach that focuses on abstract versus concrete mental representations, termed in this framework *high-level construals* and *low-level construals*, respectively. High level construals are abstract representations that capture the essence or gist of information, with the more important points distinguished from less important elements. Such representations tend to be schematic and cross-situational as well as oriented more toward questions of "why" than questions of "how." Low-level construals, in contrast, are concrete and contextualized and increasingly concern "how" issues related to the means by which activities are accomplished.

Construal-level theory explores factors that shift people's construal level and the consequences of such shifts for judgment and behavior. Construal-level theorists have argued most forcefully that increased distance (spatial, temporal, hypothetical, or social) activates higher level representations. For instance, events that will

occur in the distant future are described in higher level terms (e.g., studying) compared with events that will occur in the near future, which are described in lower level terms (e.g., reading a book; Liberman & Trope, 1998). Similarly, people use more abstract descriptions when describing events that occur in a spatially far away location compared with a location nearby (Fujita, Henderson, Eng, Trope, Liberman, 2006), events that are unlikely to occur rather than likely to occur (Wakslak, Trope, Liberman, & Alony, 2006), and events that happen to dissimilar others rather than to themselves (Liviatan, Trope, & Liberman, 2008).

In recent treatments, construal-level theorists have argued that the underlying reason for this association between distance and construal is functional (e.g., Ledgerwood, et al., 2010; Trope & Liberman, 2010): Because low-level concrete details are more likely to change or be different across distance, it is generally useful to conceptualize distant objects and events in a more abstract and schematic way that captures the essence of the object or event without constraining it to a particular substantiation. For example, if an individual is thinking about playing basketball later today, it makes sense for him to think of this activity in all its concrete details, as that person will be likely to know what the weather will be like, who will be available to play, and so on. But if that individual thinks about playing basketball in a year from now, it would be generally useful for him to think of this activity more abstractly, as the game may take place indoors or outdoors, with the same or a different group of friends than he currently has, or be altogether substituted for a game of soccer. Of course, sometimes the details of a distant event are fixed and unchanging; the theory expects, however, that because abstraction and distance become linked, the association may serve as a generalized heuristic, even in situations where it is not particularly functional.

To put it somewhat differently, the underlying theoretical argument of CLT is that bridging across contexts is facilitated by high-level construals, which capture the essential components of an object or event that are unlikely to change across situations (Trope & Liberman, 2010). Indeed, recent research has expanded the focus of CLT from exploring how representation of an object changes when *that object* is distant versus near, to exploring how people use abstraction to relate to others who are more or less distant (e.g., via communication; Amit, Wakslak, & Trope, 2013; and via social exchange; Baskin, Wakslak, Trope, & Novemsky, 2013). Moreover, although the primary focus of empirical construal-level work has been on psychological distance, the theory's logic thus suggests that high-level construals should be activated whenever it is important to be widely relevant and relatable.

This argument suggests a set of converging reasons for audience size to impact message abstraction. First, communicating with many individuals challenges a communicator to frame messages such that they serve as a bridge across various audience members' individual idiosyncrasies. That is, given that groups are perceived to be more heterogeneous than individuals (Hamilton & Sherman, 1996; McConnell, Sherman, & Hamilton, 1994), communicating with many people should activate a concern with being widely relevant, the very concern that CLT has argued is the fundamental trigger of adopting high-level construals, which most appropriately capture the information about an object that will be consistent and relevant across varying contexts (Ledgerwood et al., 2010). Thus, knowing that a message will be received by many people should

prompt communicators to focus on the general aspects of the information rather than specific concrete details.

In addition, a number of previous findings are suggestive of a link between larger audience sizes and increased distance. People perceive individuals to be more socially proximal to themselves than groups: they see individuals as more similar to themselves and tend to like individuals better (Sears, 1983). People also feel more psychologically connected to single individuals than to larger groups, as evidenced in their greater charitable donations to identified single individuals than to unidentified individuals from a larger group of victims (Small & Loewenstein, 2003) and in advisors' greater empathic concern toward single individuals than groups (Sah & Loewenstein, 2012). Furthermore, large audiences may even be perceived to be more geographically distant than small audiences. For example, in face-to-face contact, speakers are typically more physically distant from their audience when speaking to a large audience than when speaking to an individual. Even in written communication contexts, when communicating with a large audience, it is typically more likely that at least some of the audience will be located more distally.

Taken together, these converging rationales suggest that larger audiences would lead communicators to adopt more abstract message framing. We tested this hypothesis in a series of six experiments. Across these experiments, we sought to minimize the impression management and anxiety concerns that might be prompted by speaking to a large audience; we therefore always had people communicate anonymously via computer to either a single (unidentified) individual or many (unidentified) individuals. We begin by describing a simple pilot study that substantiated our assumption that people associate large audiences with increased heterogeneity and distance.<sup>1</sup> We then examined differences in abstraction in communication as a function of audience size, using a variety of communication tasks across Studies 1–4. In Studies 3 and 4, we also explored whether motivation to communicate with one's audience might moderate the audience size/abstraction effect. If communicators use abstract messages to effectively bridge across individuals and contexts (and use concrete messages to effectively connect with a single other individual), then increased motivation to connect with one's audience should lead to an enhanced audience size/abstraction effect. In Study 5, we explored a key element of the process we believe drives these effects, experimentally manipulating perceived heterogeneity of the audience. Finally, in Study 6, we explored one implication of an audience size/abstraction effect, investigating participants' experienced fluency in communication as a function of the match between message abstraction and audience size.

### Pilot Study

An underlying assumption of our audience size/abstraction prediction is that speakers on average perceive larger audiences as more heterogeneous and distant. To examine this assumption, we asked participants to reflect on their general experiences of communicating with an audience of one individual, two individuals, or many individuals and their perceptions of associated audience characteristics.

## Method

**Participants.** Seventy-one Amazon Mechanical Turk (MTurk) users (31 women, 40 men) participated in exchange for \$0.30. In all our studies involving an MTurk platform, we restricted our sample to MTurk participants who were in the United States and had an above 90% approval rate for previously completed tasks. In a within-participant design, participants considered an audience of one individual, two individuals, or many individuals (random ordered, presented on separate pages) and responded to questions about their experience of communicating with each differently sized audience.

**Materials and procedure.** Participants indicated how heterogeneous and spatially and socially distant they perceived the different size audiences to be. We measured perceptions of heterogeneity by asking, "On average, when communicating with an audience of two [many] individuals, how similar to each other are the members of the audience likely to be?" (1 = *very similar*; 9 = *very dissimilar*). This heterogeneity question was nonsensical for the single target, so it was not asked in that case. Participants also completed items about perceived spatial distance ("On average, when communicating with an audience of one [two/many] individual[s], how far away from the audience are you likely to be?") and social distance ("On average, when communicating with an audience of one [two/many] individual[s], how connected with the audience are you likely to be"; "When communicating with an audience of one [two/many] individual[s], how similar to yourself is the audience likely to be?";  $r = .87$ ), all using 9-point scales.

## Results and Discussion

Participants expected an audience of many individuals ( $M = 4.90$ ,  $SD = 1.81$ ) to be more heterogeneous than an audience of two individuals ( $M = 4.24$ ,  $SD = 1.91$ ),  $t(70) = 2.82$ ,  $p = .006$ ,  $d = 0.34$ . Participants also expected differences in spatial distance as a function of audience size,  $F = 7.62$ ,  $p = .001$ ,  $\eta_p^2 = .13$ . Post hoc tests showed that the large audience was expected to be more spatially distant than the one-person audience ( $M = 3.49$ ,  $SD = 2.18$ ,  $p = .001$ ) and the two-person audience ( $M = 4.00$ ,  $SD = 2.18$ ,  $p = .06$ ), although the latter effect was only marginally significant. The cases involving two individuals and one individual also significantly differed ( $p = .01$ ). Similarly, participants expected differences in social distance,  $F = 30.51$ ,  $p < .001$ ,  $\eta_p^2 = .36$ . Post hoc tests showed that the audience of many individuals ( $M = 5.29$ ,  $SD = 1.75$ ) was expected to be more socially distant than a two-person audience ( $M = 4.07$ ,  $SD = 1.82$ ,  $p < .001$ ) or one-person audience ( $M = 3.62$ ,  $SD = 2.03$ ,  $p < .001$ ), which also differed significantly from each other ( $p = .008$ ). Overall, then, the pilot data supported our assumption that larger audiences are perceived to be more heterogeneous and distant than smaller

<sup>1</sup> While we expect that in most day to day communication contexts, people associate a large audience with greater heterogeneity and spatial and social distance than an audience of one individual, there are likely to be communication contexts in which audience size is not clearly related to audience heterogeneity or distance. Indeed, there may be people who on average tend to communicate with single individuals who are faraway (colleagues via Skype) and groups that are nearby (classroom participants). Such people may not show the default tendencies we explore here, a prediction we leave to future research to examine.

audiences. Further, the data suggested that these perceptions tend to covary, with perceptions of heterogeneity associated with perceived spatial ( $r = .37$ ) and social ( $r = .60$ ) distance from the audience. Having laid this foundation, we now turn to our primary hypotheses, examining whether people frame messages more abstractly when communicating with a large audience.

### Study 1: Describing Daily Activities

Participants in Study 1 provided a description of a day in the life of a student at their university to either one incoming student or 50 incoming students. We expected descriptions to be more abstract when they would be directed to 50 students, as opposed to one student.

#### Method

**Participants.** Eighty students from a West Coast business school (44 women, 36 men;  $M_{age} = 20.76$  years,  $SD = 2.10$ ) participating in exchange for course credit were randomly assigned to the one-person or 50-person audience condition.

#### Materials and procedure.

**Audience size manipulation.** Under the cover story that the school's office of admissions was designing a program to connect current students with those admitted to the school for the upcoming school year, we asked participants to write a description of "A Day in My Life at Marshall," which was to be sent to either one admitted student or 50 admitted students.

**Measure of construal level.** Participants' descriptions were coded as either abstract or concrete by two independent raters who were blind to condition (92% agreement), with any discrepancies resolved through discussion. Descriptions were coded as concrete if they were oriented toward how a student went about his or her routine activity, were individualized and specific to the participant, or dealt with issues of feasibility. Responses were coded as abstract if they related to why a student engaged in activities, were general and universal to most other students, or dealt with issues of desirability (see the Appendix for sample responses). A coder blind to condition also coded the descriptions using the *Linguistic Categorization Model Manual* (LCM manual; Coenen, Hedeboew, & Semin, 2006), a widely used method for coding abstraction in communication. Communications were coded for the number of adjectives (e.g., busy, great), state verbs (e.g., love, admire), interpretive action verbs (e.g., help, socialize), and descriptive action verbs (e.g., go, walk), four linguistic categories that fall along a dimension of abstractness, with adjectives most abstract and descriptive action verbs most concrete. The number of each linguistic category used in the communication was then used to compute an overall abstraction score, ranging from 1 to 4, following instruction provided in the LCM manual.

In addition to abstraction, we also tabulated response length and coded for response valence. Participants also provided ratings of felt responsibility toward the other student, amount of effort put into writing the descriptions (both on scales ranging from 1 = *very little* to 7 = *very much*), and feelings when writing the description (1 = *very negative*, 7 = *very positive*). Finally, participants completed a manipulation check asking them to report whether they were providing descriptions to be read by a single new student or many new students.

### Results and Discussion

Data of six participants who were not Marshall students<sup>2</sup> and three participants who failed the manipulation check were excluded from further analysis. Responses in the single- and multiple-individual audience conditions did not differ in terms of length and valence ( $ps > .46$ ). Furthermore, there were no condition differences in perceived responsibility toward the new students, effort taken to write the descriptions, or feelings when writing the descriptions ( $ps > .37$ ). As hypothesized, participants communicating with a larger audience of 50 students ( $n = 36$ ) were more likely to write abstract descriptions of their everyday life as a student than were participants communicating with a single other student ( $n = 35$ ),  $\chi^2(1, N = 71) = 5.11, p = .03$  (see Figure 1). In the large-audience condition, 43% of the responses provided by participants were abstract, compared with 18% of the responses provided by participants in the small-audience condition. Mirroring this pattern, participants in the 50-person audience condition had higher LCM abstraction scores ( $M = 2.09, SD = 0.62$ ) than participants in the one-person audience condition ( $M = 1.75, SD = 0.73$ ),  $t(1, 70) = 2.18, p = .03, d = 0.52$  (indeed, the two indices were highly correlated,  $r = .72$ ).

### Study 2: Self-Trait Ascription

Study 2 conceptually replicates the findings of Study 1 using a different construal measure. In previous research, higher level construal has been associated with greater self-trait ascription; for example, participants are more likely to describe their future self as trait-like than their present self, which they tend to see as situationally variable (Wakslak, Nussbaum, Liberman, & Trope, 2008). In the current study, we asked participants to describe themselves to either a single other individual, five other individuals, or 100 other individuals, and explored whether participants communicating with a large audience are more likely to describe themselves in terms of stable traits compared with participants communicating with a single individual.

#### Method

**Participants.** One hundred five MTurk workers (54 women, 51 men;  $M_{age} = 27.92$  years,  $SD = 10.02$ ; 69% White) participating for \$0.20 were randomly assigned to the one-person, five-person, or 100-person audience condition.

#### Materials and procedure.

**Audience size manipulation.** Under the cover story that they were helping us create materials for future studies, participants were asked to provide some information about themselves that would subsequently be presented to one other/five other/100 other participant(s). Following the audience size manipulation, participants completed a measure of self-trait ascription (Pronin & Ross, 2006).

**Self-trait ascription measure.** Participants saw nine items representing opposing trait characteristics (e.g., serious-carefree,

<sup>2</sup> Marshall is a separate undergraduate business program at the University of Southern California (USC). Students in USC's other programs may sometimes take Marshall classes (and thereby end up in the Marshall subject pool), although they are not Marshall students.

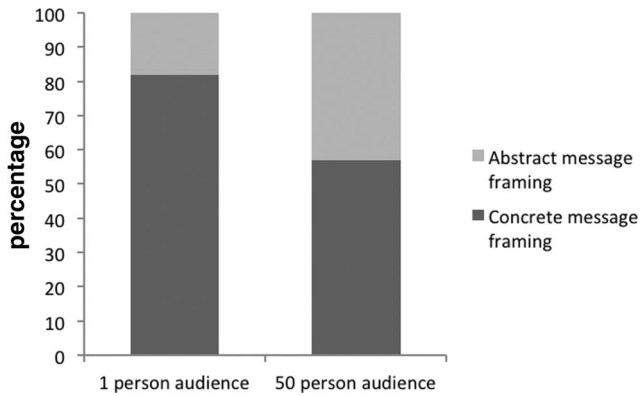


Figure 1. Audience size and percentage of abstract and concrete messages (Study 1).

subjective–analytic, energetic–relaxed, intense–calm). For each item, participants selected one of the two traits to describe themselves to the audience or a third option of “variable/depends on the situation.” The number of times participants chose either of the two trait options (as opposed to the “variable” option) was used as a measure of self-trait ascription. Note that this measure does not get at people’s desire to describe themselves more or less positively (as traits on all poles can be construed positively), but rather their tendency to describe themselves in a more schematic, consistent manner (i.e., high-level construal) versus a more variable, contextualized (i.e., low-level construal) manner.

Participants also completed a manipulation check in which they were asked for the number of other individuals who would be reading their self-description.

## Results and Discussion

Data of six participants who failed the manipulation check were excluded from our analyses. As hypothesized, audience size influenced participants’ communicated trait self-ascription,  $F(2, 97) = 3.61, p = .03, \eta_p^2 = .07$ , see Figure 2. Least significant difference tests showed that participants describing themselves to one individual used fewer trait terms ( $n = 20, M = 4.00, SD = 3.11$ ) than participants describing themselves to five individuals ( $n = 37, M = 5.35, SD = 2.45; p = .04$ ) and 100 individuals ( $n = 42, M = 5.66, SD = 1.67; p = .01$ ). Interestingly, participants in the five-person audience and 100-person audience conditions did not significantly differ in their trait self-ascription ( $p = .55$ ), which suggests that once one is communicating with many people, increasing the number of people may not have a further impact on abstraction. This is in line with research that suggests that group size is not consistently related to perceptions of group heterogeneity, with some research indicating that large social categories can even be seen as more entitative or homogeneous than small groups (Lickel, Hamilton, & Sherman, 2001; Mullen et al., 1991).

Earlier, we argued that an abstraction/audience-size effect would emerge because people are attempting to traverse the heterogeneity and distance associated with larger audiences. However, an alternative explanation is that the effects stem from larger numbers activating a high-level construal mindset (cf. Maglio & Trope, 2011) in communicators, which then happens to impact

their communication. To disentangle these possibilities, in Study 3 we explored whether communicators who are more motivated to communicate with their audience show a stronger audience size/abstraction effect. If our findings were moderated by communicators’ motivation, this would suggest that they are not driven by a priming effect (which one would not expect to be contingent on motivation) but emerge from communicators’ attempt to effectively communicate with their audience.

## Study 3: Why Versus How Persuasive Arguments

Effective communication involves tailoring messages to the audience. To the extent that communicators are motivated to communicate with their audience, they should adopt higher level construals when communicating with larger audiences in order to best communicate with such a diverse and relatively distant audience. In Study 3, we explored this idea within the context of persuasion, suggesting that participants would use higher level construal arguments to persuade many individuals and that communicators’ motivation to persuade the audience would moderate this tendency.

One persuasion-relevant aspect of high versus low levels of construal is whether a speaker emphasizes issues related to desirability, or abstract end states, versus feasibility, the concrete means by which action is carried out (Liberman & Trope, 1998). From a construal-level perspective, desirability is a high-level feature because it is more superordinate and defining in nature (i.e., it best captures the gist of an activity or outcome); feasibility is a more secondary, supporting concern that involves the concrete means of action by which something will be done; supporting this conceptualization, many studies have linked distance with an increased focus on desirability concerns over feasibility concerns (Liberman & Trope, 1998; Liviatan et al., 2008; Sagristano, Trope, & Liberman, 2002). Participants in Study 3 were asked to persuade either a single person or many individuals to recycle. Participants choose arguments from a provided list, which included desirability, “why-oriented” arguments (e.g., recycling helps sustain the environment for future generations), as well as feasibility, “how-oriented” arguments (e.g., on average, organizing one’s recycling takes less than 5 min each day). We hypothesized that participants persuad-

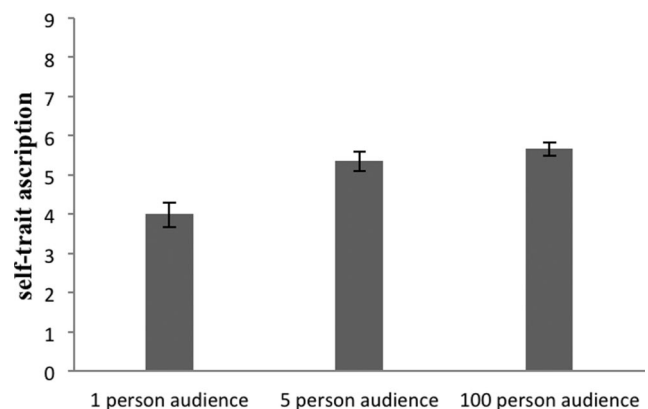


Figure 2. Self-trait ascription when communicating with one individual, five individuals, or 100 individuals (Study 2). Error bars represent standard errors.

ing many individuals would use more high-level, desirability arguments than participants persuading a single person. Furthermore, we explored whether this effect would be moderated by participants' motivation to communicate with their audience.

## Method

**Participants.** One hundred two MTurk workers (63 men, 37 women, two not reporting gender;  $M_{age} = 31.34$  years,  $SD = 11.06$ ; 76% White) participating in exchange for \$0.45 were assigned to either the one-person or 20-person audience condition.

### Materials and procedure.

**Audience size manipulation.** Participants were instructed to select arguments to persuade either one or 20 other people to recycle; audience members would ostensibly later report their attitudes toward recycling as a measure of the effectiveness of the arguments participants selected.

**Persuasion task.** Participants saw 14 arguments (seven desirability, seven feasibility) supporting recycling and selected six of these arguments to persuade the audience to recycle. The arguments were pilot tested to ensure that they did not differ in their persuasiveness ( $M_{why} = 4.44$ ,  $SD = 1.60$ ,  $M_{how} = 4.58$ ,  $SD = 1.31$ ),  $t(19) = 0.63$ ,  $p = .53$ , and only differed in terms of whether they related to feasibility (how recycling is done;  $M_{how} = 4.76$ ,  $M_{why} = 2.8$ ,  $p < .001$ ) or desirability (why one should recycle:  $M_{why} = 6.29$ ,  $M_{how} = 2.41$ ,  $p < .001$ ; all scales range from 1 to 7). Our dependent measure was the number of high-level desirability arguments selected.

**Motivation to persuade measure.** Following the persuasion task, participants indicated their degree of motivation to persuade their audience on four items (sample item: "I was very motivated to convince my audience to recycle";  $\alpha = .93$ ) using a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). In general, participants in our sample were motivated to persuade the audience ( $M = 4.10$ ,  $SD = 0.84$ ).

Participants also provided ratings of their support for recycling, the extent to which they believed the other individual/s would be persuaded by the arguments they provided, and the ease of completing the persuasion task, in addition to completing a manipulation check item asking them to indicate the number of people who would be reading their arguments.

## Results and Discussion

Data of 17 participants who failed the manipulation check or did not complete the persuasion task were excluded from analysis. Participants persuading a single individual or many individuals did not differ in their support for recycling or in how persuasive they believed they were or how easy they found the task ( $ps > .45$ ). As expected, however, they did differ in their argument selection: Participants persuading a single individual selected fewer desirability-related arguments ( $n = 35$ ,  $M = 2.71$ ,  $SD = 1.52$ ) compared with participants persuading many other individuals ( $n = 50$ ,  $M = 3.48$ ,  $SD = 1.46$ ),  $t(1, 84) = 2.33$ ,  $p = .02$ ;  $d = 0.51$ .

We next explored whether participants' motivation to persuade their audience would moderate the effects. Results revealed a significant interaction between audience size (dummy coded such that 0 = single individual and 1 = many individuals) and motivation (centered),  $B = 0.81$ ,  $SE = 0.38$ ,  $t(82) = 2.12$ ,  $p = .04$ ,

$R^2 = .07$ , indicating that as motivation to communicate with the audience was stronger, the audience size effect (greater selection of desirability arguments for the many-individual over single-individual audience) increased. To explore this interaction further, we considered the audience size effect at various levels of motivation to communicate. At our sample's average level of motivation (which was considerably high, 4.10 on a 5-point scale), audience size had a sizeable influence,  $B = 0.77$ ,  $SE = 0.32$ ,  $t = 2.39$ ,  $p = .02$ . At a standard deviation above this average, the audience size effect was even stronger,  $B = 1.46$ ,  $SE = 0.46$ ,  $t = 3.18$ ,  $p = .002$ ; at a standard deviation below this average, the audience size effect was no longer significant,  $B = 0.09$ ,  $SE = 0.46$ ,  $t = 0.20$ ,  $p = .85$  (see Figure 3). Thus, consistent with findings of Studies 1 and 2, when persuading a larger audience, speakers emphasized more high-level issues compared with when persuading a smaller audience, an effect that was more pronounced as participants were more motivated to persuade their audience.

### Study 4: Motivation to Persuade and the Strategic Use of Abstraction

Although Study 3's findings suggest that communicators' motivation moderates the audience size/construal effect, it is possible that participants who expressed greater or lesser motivation in the persuasion task differed in other ways as well. To address this concern, Study 4 experimentally manipulates participants' motivation in order to further examine the hypothesis that when participants are motivated to persuade their audience they will be more likely to use abstract messages when communicating with many individuals and concrete messages when communicating with a single other person.

## Method

**Participants.** One hundred eighteen MTurk workers (75 men, 43 women;  $M_{age} = 29.97$  years,  $SD = 12.04$ ; 76% White) participating in exchange for \$0.50 were assigned to one of four con-

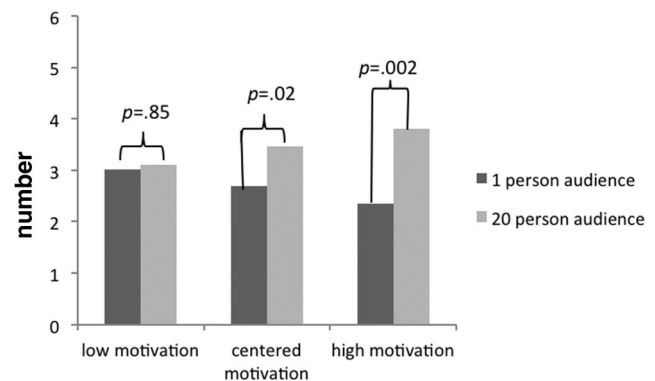


Figure 3. Number of desirability arguments selected to persuade a single- or 20-person audience as a function of motivation to persuade the audience (Study 3). Middle bars are the audience size effect at centered motivation (4.10 on 5-point scale). High is a standard deviation above that (4.94 on 5-point scale). Low is a standard deviation below center (3.26 on 5-point scale).

ditions in a 2 (audience size: one, many)  $\times$  2 (motivation to persuade: high, low) between-participants design.

### Materials and procedure.

**Motivation-to-persuade manipulation.** Participants were recruited for a “market research study” that involved persuading other MTurk users to buy Mojo Juice, a product manufactured and distributed by Vitality.inc, a fictional company that supposedly had sponsored the study. Ostensibly to satisfy a requirement of our university’s institutional review board, we provided a brief description of Vitality.inc and its product lines. Motivation to persuade was manipulated by providing positive or negative information about Vitality’s manufacturing practices. In the low-motivation condition, participants were informed that Vitality.inc was not certified as having good manufacturing practices (GMP; e.g., floors, walls, and ceilings of Vitality’s buildings were not easily cleanable and did not meet maintenance standards; water supply was not tested regularly for conformance with specifications, and so on). In the high-motivation-to-persuade condition, participants were informed that Vitality.inc was GMP certified (along with corresponding details; e.g., floors, walls, and ceilings of Vitality.inc buildings were easily cleanable and met maintenance standards, and so on).

**Audience-size manipulation.** Participants were instructed to select arguments to persuade either one person or 20 other people to buy a newly launched product called Mojo Juice; audience members would ostensibly later report their attitudes toward Mojo Juice as a measure of the effectiveness of the arguments participants selected.

**Persuasion task.** Participants saw 14 arguments (seven abstract, seven concrete) supporting Mojo Juice and selected six arguments to persuade the audience to buy the new product. We constructed the abstract and concrete arguments following the LCM (Semin & Fiedler, 1988); abstract arguments used relatively abstract linguistic categories (adjectives and state verbs), and concrete arguments used concrete linguistic categories (descriptive action verbs and interpretive action verbs). Abstract arguments included “Mojo Juice is delicious and fresh,” and “Mojo Juice is 100% Natural.” Concrete arguments included “Mojo Juice does not contain preservatives or added sugar,” and “Mojo Juice is available in flavors such as Strawberry Kiwi Kick and Orange Mango Motion.” The arguments were pilot tested such that they did not differ in their persuasiveness ( $M_{abs} = 4.69$ ,  $SD = 1.42$ ,  $M_{conc} = 4.78$ ,  $SD = 1.51$ ),  $t(39) = 0.58$ ,  $p = .56$ . Our dependent measure was the number of abstract (vs. concrete) arguments participants selected.

**Motivation manipulation check.** Following the persuasion task, participants reported the extent to which they had been motivated to persuade their audience on four items (sample item: I was motivated to persuade my audience to buy Mojo Juice; 1 = *strongly disagree*, 6 = *strongly agree*;  $\alpha = .88$ ). Participants also reported the number of MTurk users who would be reading the arguments they provided.

## Results and Discussion

Data of seven participants who failed to correctly identify whether they were communicating with one or many individuals were excluded from analysis.

**Motivation manipulation check.** Participants in the high-motivation condition ( $M = 4.66$ ,  $SD = 1.10$ ) reported being more motivated to persuade their audience to buy Mojo Juice than participants in the low-motivation condition ( $M = 3.73$ ,  $SD = 1.40$ ),  $t(1, 110) = 4.32$ ,  $p < .001$ .

**Focal analysis.** As expected, a 2  $\times$  2 analysis of variance (ANOVA) yielded a significant interaction effect on argument selection,  $F(1, 110) = 14.01$ ,  $p < .001$ ,  $\eta_p^2 = .12$ . Whereas participants in the high-motivation condition adapted their communication to the audience size such that they used more abstract messages when persuading a large audience ( $n = 27$ ,  $M = 2.48$ ,  $SD = 0.70$ ) and more concrete messages when persuading a small audience ( $n = 24$ ,  $M = 1.79$ ,  $SD = 0.66$ ),  $t(1, 50) = 2.89$ ,  $p = .006$ ,  $d = 0.80$ , participants in the low-motivation condition exhibited the opposite trend, using more abstract messages when communicating with a one-person audience ( $n = 35$ ,  $M = 2.23$ ,  $SD = 0.94$ ) compared with an audience of many individuals ( $n = 25$ ,  $M = 1.80$ ,  $SD = 0.71$ ),  $t(1, 59) = -1.91$ ,  $p = .06$ ,  $d = 0.50$ .

These findings suggest that the use of abstraction in communication may be triggered by one’s motivation to successfully communicate. Participants who were induced to be motivated to persuade the audience were more likely to use abstract communication when faced with a large audience in order to transcend the variability and distance associated with audience size. However, when participants were demotivated to persuade their audience, communicators no longer turned to abstract communications to reach a large audience.

## Study 5: Audience Heterogeneity Effects on Abstraction

The previous four studies supported our hypothesis that speakers use abstract language when communicating with a large audience. Earlier, we argued that a key reason speakers may use such language in that context is in order to overcome the heterogeneity associated with large audience size. In Study 5, we more directly explored this idea by explicitly manipulating the presumed heterogeneity of the audience. We hypothesized that when encountering a heterogeneous audience, participants would increasingly use more abstract messages, irrespective of audience size.

### Method

**Participants.** Participants were 140 MTurk workers (66 men, 74 women;  $M_{age} = 35.14$  years,  $SD = 13.17$ ; 71% White) who took part in a “study on communication in virtual teams” in exchange for \$0.30. Participants were randomly assigned to one of four conditions in 2 (audience size: two-person, 10-person)  $\times$  2 (audience heterogeneity: high, low) between-participants design.

### Materials and procedure.

**Audience size manipulation.** Under the cover story that we were interested in persuasion effectiveness, we asked the participants to provide arguments promoting recycling to an audience of either two or 10 MTurk users.

**Audience heterogeneity manipulation.** Participants were informed that their audience was composed of members who were either very similar to one another or very different from one another. In particular, we told participants the following:



We have obtained information about demographics characteristics, political opinions, and general attitudes from many MTurk users by compiling data from multiple studies. Based on the information we have collected, we will select two [10] MTurk users who differ from each other [are very similar to each other] in terms of these characteristics (age, gender, socioeconomic status, location, political orientation, and general opinions). You will be asked to select arguments in order to persuade the two [10] MTurk users to recycle.”

Participants then saw a screen indicating we were matching them with their audience, after which they completed the persuasion task.

**Persuasion task.** Participants were presented with the same 14 pro-recycling arguments as in Study 3 (seven desirability, seven feasibility) and selected six arguments to persuade the audience to recycle.

**Heterogeneity manipulation check.** Participants completed the item “How similar to each other or different from each other are the MTurk users you were persuading?” (1 = *very different from each other*, 7 = *very similar to each other*).

## Results and Discussion

Data of nine participants who did not accurately complete the persuasion task or failed to correctly identify the size of their intended audience were excluded from analysis.

**Heterogeneity manipulation check.** Participants in the low-heterogeneity condition ( $M = 5.45$ ;  $SD = 1.31$ ) indicated the MTurk users they were persuading were more similar to each other than did participants in the high-heterogeneity condition ( $M = 2.84$ ;  $SD = 1.92$ ),  $t(128) = 8.96$ ,  $p < .001$ ,  $\eta_p^2 = .39$ .

**Focal analysis.** We conducted a 2 (audience size: two, 10)  $\times$  2 (audience heterogeneity: high, low) ANOVA on the number of desirability (vs. feasibility) arguments selected by the participant to persuade the audience. This analysis did not yield a main effect of audience size,  $F(1, 130) = 0.47$ ,  $p = .49$ ,  $\eta_p^2 = .004$ , or an interaction between audience size and heterogeneity,  $F(1, 130) = 2.36$ ,  $p = .13$ ,  $\eta_p^2 = .02$ . However, as anticipated, we obtained a significant main effect of heterogeneity, such that participants in the high-heterogeneity conditions ( $n = 65$ ,  $M = 3.95$ ,  $SD = 1.0$ ) were more likely to use desirability-related items than participants in the low-heterogeneity conditions ( $n = 66$ ,  $M = 3.38$ ,  $SD = 1.36$ ),  $F(1, 130) = 7.18$ ,  $p = .008$ ,  $\eta_p^2 = .05$  (See Figure 4).<sup>3</sup> Thus,

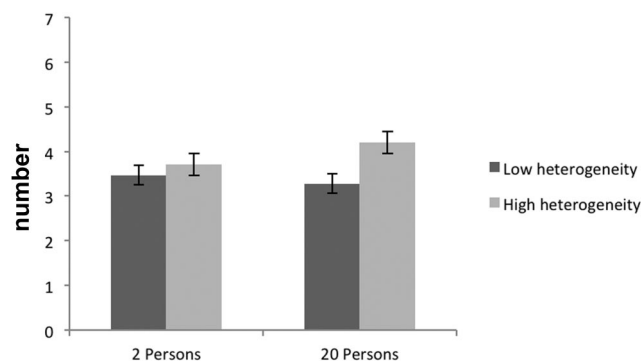


Figure 4. Number of desirability arguments selected to persuade a two- or 20-person audience as a function of audience heterogeneity (Study 5). Error bars represent standard errors.

when audience heterogeneity and audience size were orthogonally manipulated, participants used more abstract communication when they encountered a heterogeneous audience than a homogeneous audience, irrespective of audience size, suggesting that heterogeneity is a critical driver of the audience size/abstraction effect (for a general recommendation of this type of moderation design to examine underlying psychological processes, see Spencer, Zanna, & Fong, 2005).

## Study 6: Audience Size/Construal Fit

In our final study, we examined whether the match between message framing and audience size influences communicators’ feelings of fluency. Past research on message *recipients* suggests that individuals experience greater processing fluency when they experience a fit between the framing of a message and their construal-level mindset. For example, Kim, Rao, and Lee (2009) found that voters are more likely to be persuaded by messages when the framing of the message (abstract/concrete) was consistent with that to be expected by the temporal distance of the event (far/near), because people process information more fluently when its level of abstraction fits their level of construal of the situation. Similarly, participants are more likely to experience arguments as being truthful when they are asked to adopt a concrete mindset when presented with a concrete message compared with an abstract mindset (Hansen & Wanke, 2010), suggesting that participants experience greater fit (which is then seen as a sign of truthfulness) when message framing matches their construal level. Building on this prior work, we examined fit effects on the part of the *communicator*; specifically, we explored whether communicators experience increased fluency when there is match between their communication style and the audience size. When communicating with a single individual, it may feel increasingly natural to communicate a concrete (rather than abstract) message, and vice versa when communicating with many individuals. We examined this “fluency from fit” prediction by asking participants to describe objects in either high- or low-level terms to one individual or nine individuals. Of note, we did not make any main effect predictions here, but rather focused on the relative fluency of concrete and abstract communication across audience sizes. That is, it is possi-

<sup>3</sup> Although our primary intention in this study was to manipulate perceived heterogeneity, we also included measures of spatial and social distance perception, given the covariance of such items with perceived heterogeneity in our pilot study, and the convergent role we see distance and heterogeneity as having in this context. Spatial distance measures were “How far away from each other are the MTurk users you were persuading?” and “How far away from yourself do you think the MTurk users you were persuading are located?” (1 = *very near*, 7 = *very far*). Social distance measures were “How similar to yourself do you think the MTurk users you were persuading are?” and “How connected do you feel to the MTurk users you were persuading?” (1 = *very little*, 7 = *very much*). In line with the covariation of heterogeneity and distance in our earlier pilot study, participants in the low-audience-heterogeneity condition ( $M = 5.01$ ;  $SD = 1.48$ ) perceived the audience as less spatially distant than participants in the high-audience-heterogeneity condition ( $M = 5.66$ ;  $SD = 1.75$ ),  $F(1, 130) = 5.12$ ,  $p = .02$ ,  $\eta_p^2 = .04$ . Similarly, participants in the low-audience-heterogeneity condition ( $M = 4.29$ ;  $SD = 1.11$ ) perceived the audience as less socially distant than participants communicating with a heterogeneous audience ( $M = 3.55$ ;  $SD = 1.35$ ),  $F(1, 130) = 11.91$ ,  $p = .001$ ,  $\eta_p^2 = .09$ . However, measures of distance did not mediate our findings.

ble that concrete or abstract communication overall leads to greater feelings of fluency (i.e., that one or the other might feel more natural to participants, given the particular experimental context and manipulation of abstraction); our prediction is therefore focused on the relative fluency of these two types of communication when communicating with one versus many individuals.

## Method

**Participants.** Seventy-eight MTurk workers (29 men, 48 women;  $M_{age} = 36.48$  years,  $SD = 11.86$ ; 83% White) participating in a “study on communication in virtual teams” in exchange for \$1.00 were assigned to one of four conditions in a 2 (audience size: one person, nine person)  $\times$  2 (construal level of message: high, low) design.

### Materials and procedure.

**Audience size manipulation.** Under the cover story that we were interested in virtual collaborations, we informed the participants that they would be collaborating with one other person in a two-person team or nine other persons in a 10-person team. Following this explanation, participants were given instructions to engage in a categorization task, in which they communicated either abstract item categories or concrete item exemplars to their team members.

**Communication task.** Adapting a task that has been used in prior construal-level research (Fujita, Trope, Liberman, & Levin-Sagi, 2006), participants in the abstract message condition were instructed to provide superordinate categories (e.g., “Wine is an example of what?”), whereas participants in the concrete message condition were instructed to provide subordinate exemplars (e.g., “An example of wine is what?”) for various objects (e.g., pen, tree, car, wine) in order to describe these to their fellow group members. After completing this task,<sup>4</sup> participants completed a measure of fluency by rating their agreement with two items: “When I was communicating the information to my team member(s), it felt right,” and “It felt natural to communicate with my team member(s).” (1 = *strongly disagree*; 7 = *strongly agree*,  $\alpha = .88$ ).

## Results and Discussion

Data of four participants who did not accurately complete the categorization task were excluded from analysis. All other participants completed at least 15 of the 20 items from the categorization task correctly. A 2  $\times$  2 ANOVA yielded a significant interaction effect,  $F(1, 73) = 5.12$ ,  $p = .02$ ,  $\eta_p^2 = .09$  (see Figure 5). Communicators addressing a single other team member reported greater fluency when the communication task involved concrete construal (communicating exemplars: e.g., wine  $\square$  pinot grigio;  $n = 17$ ,  $M = 5.5$ ;  $SD = 1.0$ ) than when the communication task involved abstract construal (communicating categories: e.g., wine  $\square$  beverage;  $n = 22$ ,  $M = 4.28$ ;  $SD = 1.47$ ),  $t(38) = 2.43$ ,  $p = .01$ ,  $d = 0.73$ . This increased fluency of concrete messaging completely disappeared when participants were communicating with many individuals. Communicators addressing several individuals did not report greater fluency when the communication task involved concrete construal ( $n = 17$ ,  $M = 4.64$ ,  $SD = 1.34$ ) rather than abstract construal ( $n = 18$ ,  $M = 4.85$ ,  $SD = 1.51$ ),  $t(34) = 0.19$ ,  $p = .85$ .

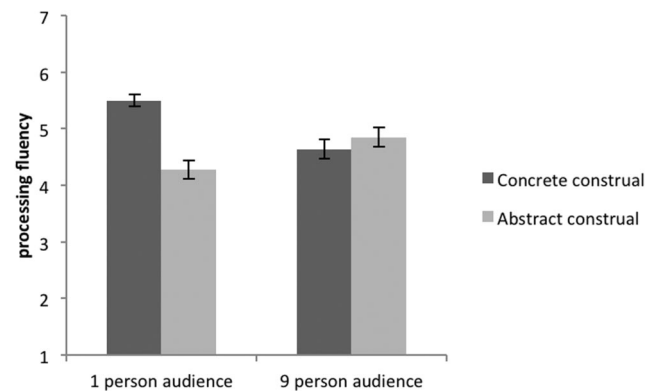


Figure 5. Processing fluency when communicating with a single person or multiple individuals using abstract or concrete message construal (Study 6). Error bars represent standard errors.

## General Discussion

Across six studies, we demonstrated that communicators use more abstract construals when communicating with many individuals as opposed to one individual. In Study 1, participants provided more abstract descriptions of a day in their life at their university when they believed 50 new students, rather than one new student, would read the description. Participants communicating with many individuals also increasingly described themselves in terms of stable traits (Study 2) and used more desirability-related persuasive arguments (Study 3). Participants who were motivated to persuade their audience were more likely to use abstract arguments when persuading many individuals and concrete arguments when persuading one individual (Studies 3 and 4). Furthermore, a direct manipulation of audience heterogeneity indicated that participants used abstract arguments to persuade a heterogeneous audience and concrete messages to persuade a homogeneous audience, irrespective of audience size (Study 5). Finally, in Study 6, we found that feelings of communication fluency are impacted by the match between audience size and message construal.

Although the general issue of audience tuning, or how communicators tailor messages to suit their audiences, has intrigued scholars for more than two decades (e.g., Echterhoff et al. 2005), our article is among the first to examine how physical characteristics of an audience influence message construal. Our findings suggest that audience size can have a widespread influence on the messages that communicators send. Indeed, this finding is novel not only in the area of communication but also in construal-level research, which has to date almost exclusively focused on intrapersonal (rather than interpersonal) processes. That is, prior research has primarily focused on people’s use of different representational styles for objects close or far to them; the current interpersonal focus suggests that characteristics of a message’s recipient can lead to a shift in the way communicators frame their message. In many ways, this gets most directly at the heart of construal-level theory’s suggestion that high-level construals allow people to transcend their own current direct experience and relate

<sup>4</sup> On average, participants completed the task in 2.17 min. The amount of time taken to complete the task did not differ by experimental condition.

to a wider range of other people and alternative realities (Trope & Liberman, 2010). Indeed, our finding in Studies 3 and 4 that motivation moderated our audience size/construal effect is among the first empirical demonstrations that people may adopt higher levels of construal when actively striving to transcend distance.

More generally, our research is consistent with a functional view of communication (Semin, de Montes, & Valencia, 2003), which suggests that communication is influenced by the motives of the communicator and tailored to the needs of the particular audience. The motivation to connect with the audience prompts strategic use of different levels of abstraction to effectively communicate with different size audiences; when such motivation to communicate is curtailed through a manipulation designed to demotivate communication, the strategic use of abstraction in communication is hindered.

Our findings can also inform research on situated cognition (Barsalou, 2008; Proffitt, 2006; Smith & Semin, 2006) and social cognition, more generally. People seem to perceive an audience of many individuals as being more distant and heterogeneous than an audience of a single person, suggesting that situational cues such as size can lead to a robust set of inferences and cognitions about an audience, shaping downstream interactions. Our findings also provide critical insights that can inform real world phenomena. People today increasingly share information with large audiences through social networks, blogs, and so forth, raising the possibility that people will be pulled more and more toward abstract ways of framing communications. Similarly, in business contexts, employees and managers may often send messages to both individuals and groups. Because there may be times when more abstract or more concrete messages are effective in most appropriately communicating the relevant information, it is important for people to understand the ways in which audience size may influence communication.

Our studies had several limitations. In all our studies, participants believed that they were communicating with an anticipated, rather than a visible, audience. Communication was also always written rather than verbalized. Furthermore, in most of our studies (an exception being Study 1), we provided participants with abstract and concrete message options to choose from in order to communicate with their audience, instead of allowing them to generate their own messages. We also did not address the question of what precisely constitutes a large audience, instead primarily focusing on the distinction between communicating with one versus many. In Study 2, however, we found that participants did not differ in the extent to which they describe themselves abstractly when communicating with a five-person or a 100-person audience. It is plausible that a five-member group is not necessarily perceived as less heterogeneous than a 100-member group, although we did not explicitly examine this point, nor systematically compare different size audiences in other studies.

We also did not examine directly the extent to which perceived distance between the speaker and audience influences abstraction (although this is consistent with prior work; cf. Amit et al., 2013), and the mediational role this may play in the audience size effects on which we focused. Although our Study 5 supports perceived audience heterogeneity as one important variable related to the audience size effect, this does not preclude the possibility that distance also contributes to this effect. While we did not seek to definitively disentangle such effects here, focusing instead on establishing an effect of audience size on abstract communication, future research might explore these multiple mechanisms more thoroughly.

Future research might also explore boundary conditions for the current set of findings. Indeed, one previous finding that is particularly relevant in this context is that of Rubini and Sigall (2002) who focused on strategic self-presentation by comparing the level of abstraction with which communicators described their political views to a two-person audience who shared those views and to an audience composed of one member who shared those views and one who did not. Hypothesizing that concrete language would offer a contextualized disagreement to the audience member who disagreed while still preserving agreement on positions of those who agreed, they expected and found that communicators used more concrete language when describing their political views to the latter audience, a strategy reflecting strategic self-representation in that context. This suggests that specific forms of heterogeneity (e.g., an audience's heterogeneity in terms of its approval of a self-aspect to be communicated) might activate particular motivational goals (strategic self-presentation) and create associated communication challenges that can be met by adapting the abstractness of one's message; such strategic use of abstraction is likely to override the general tendency of communicating more abstractly with large audiences that we have focused on here. More generally, it is important to remember as a caveat to the current research that abstract language may be used to meet motivational concerns (e.g., Douglas & Sutton, 2003, 2010) or may be triggered by the content of communication (e.g., if an action being described is easy versus difficult; Vallacher, Wegner, & Somoza, 1989). When these separate predictors of abstraction are salient, they are likely to present important boundary conditions for the current effects, a possibility we would be eager to see future research address.

## Conclusion

In conclusion, our findings demonstrate that physical characteristics of the audience, such as its size, influence message construal. Communicators use higher level construals to communicate with larger audiences and lower level construals to communicate with one individual, an effect that is moderated by communicator's motivation to communicate and related to the presumed heterogeneity of the audience. These findings extend our understanding of the communication process, as well as factors that trigger changes in construal. They also raise many questions that we hope will serve as inspiration for future work in this area.

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(Appendix follows)

## Appendix

### Examples of Responses by Participants

#### Abstract Responses

1. A day in my life at Marshall is like a learning experience, where every day I learn something new. While being raised into a business-oriented family, each class lecture teaches me something I never knew before. Lectures are inspiring, and the information address teaches you new things on a day-to-day basis!
2. Each day is a new day for discovery. With so many opportunities presented by the Marshall School of Business, you will not only be getting a great education, but you will be offered so many opportunities aimed at becoming a better and more informed business professional.

#### Concrete Responses

1. I wake up at 7 a.m. to get to my 8 a.m. class. The professor of this class is awesome so it's one that you

don't miss and that you have to be awake for. Then I have two more classes until 2 p.m. I take a lunch break with my best friends to catch up on the day before I go to my next class at 4 or go to the gym or for a run. I usually have work until around 6 or 7, and then meet up with my friends again for more fun.

2. From 8:00 to 10:00, having a finance class which is pretty intense and interesting. From 10:00 to 12:00, study at Croker Library. From 12 to 1, having lunch with friends. From 1 to 2, having a business writing class. From 2 to 4, having another finance class. Then finish the day or may go for information session or group meetings depending on schedule.

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