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Georgeta M. Hodis  
*Massey University*

Flaviu A. Hodis  
*Victoria University of Wellington*

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Static and Dynamic Interplay among Communication Apprehension, Communicative Self-Efficacy, and Willingness to Communicate in the Communication Course

Georgeta M. Hodis
Flaviu A. Hodis

The basic communication course (BCC) is a pivotal part of communication instruction of college students as it provides them with an important opportunity to develop essential communication skills and, thus, become effective communicators (Hunt, Novak, Semlak, & Myer, 2005; Hunt, Simonds, & Simonds, 2009; Pearson, Child, Herakova, Semlak, & Angelos, 2010). Regardless of how the BCC’s format may differ across instructional settings, the course “can play a substantial role in preparing students to be more critical producers and consumers of information” (Hunt et al., 2009, pp. 22-23). Additionally, the BCC facilitates the development of students’ communication skills and offers instructors the opportunity “to help students experience social support and connection” (Bingham, Carlson, Dwyer, & Prisbell, 2009, p. 30). Communication research, in general, and research linked to the BCC, in particular, point that three salient communication constructs, namely communication apprehension (CA; McCroskey, 1997), self-perceived communication competence (SPCC; McCroskey & McCroskey, 1988), and willingness to
communicate (WTC; McCroskey, 1986, 1992, 1997) are closely related to students’ ability to develop important communication skills (Byrne, Flood, & Shanahan, 2012; Hodis & Hodis, 2012; Levine & McCroskey, 1990; MacIntyre, Babin, & Clement, 1999; Rosenfeld, Grant, & McCroskey, 1995). Hence, there are pivotal theoretical and practical benefits derived from analyzing how CA, SPCC, and WTC, as well as their interrelations change during the semester in which students are enrolled in the BCC. In particular, because enhancing students’ communication skills is often associated with decreases in apprehension (Byrne et al., 2012) and increases in willingness to communicate and confidence in own ability to communicate effectively, assessments of how change in one construct (CA) relates to changes in the others (SPCC and WTC) are particularly informative for the BCC, as they can provide access to essential information (e.g., how effective the BCC is in concomitantly reducing apprehension and enhancing WTC and SPCC).

Appropriate analyses of change processes require simultaneous investigations of the static (cross-sectional) and dynamic (longitudinal) relationships among the constructs of interest. Even though recent studies (Hodis, Bardhan, & Hodis, 2010; Hodis & Hodis, 2012) analyzed some facets of change processes in the context of the BCC, no investigation has yet mapped how two or more processes of change involving multiple communication constructs interact over time during the term in which students are enrolled in the BCC. This is a problematic limitation because cross-sectional analyses, while providing a snapshot of relationships among constructs at a particular point in time, cannot inform on whether they change over time and on how
change in one construct relates to changes in the other. Moreover, snapshots of changing phenomena are sometimes quite inaccurate and, thus, can bring about conclusions that may substantially depart from actuality (see Maxwell & Cole, 2007 for detailed discussions).

In particular, cross-sectional analyses of CA, SPCC, and WTC can only reveal that apprehension is negatively correlated with WTC and SPCC and that WTC and SPCC have a positive linear association. This type of information has limited utility for BCC instructors because it only underlines that highly apprehensive students are likely to have low communicative self-efficacy beliefs (CSEB) and, consequently, exhibit low WTC levels. In contrast, simultaneous investigations of static and dynamic trends can shed light on whether: (a) changes in apprehension relate to changes in SPCC and WTC. If this proves to be true, the information is essential for estimating the downstream benefits of reducing CA for enhancing SPCC and WTC; (b) the relations among changes in CA, SPCC, and WTC are similar to those among initial levels of these constructs. This type of information is invaluable for the directors of the BCC when they evaluate the extent to which instruction in the course has differential benefits for students having different initial levels of apprehension, communicative self-efficacy beliefs, and willingness to communicate; (c) initial apprehension is (or not) associated with subsequent changes in SPCC and WTC. This type of knowledge is yet again pivotal for the BCC instructors and administrators; it pinpoints the extent to which apprehension levels at the beginning of the BCC influence how much students enhance their SPCC and WTC; (d) the magnitude of SPCC at the beginning of the semester

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is associated with subsequent changes in WTC and SPCC. For BCC instructors/ administrators this knowledge sheds light on the extent to which increases in WTC and SPCC during the BCC are influenced by having high (vs. low) initial SPCC levels. In these instances, it becomes apparent that more work needs to be done to shed fresh light on these issues by undertaking comprehensive examinations of static and dynamic relations among these constructs, as they unfold in the framework of the BCC.

This study advances extant communication research in important ways and, thus, provides salient information for teachers, administrators, and directors of the BCC. First, it sheds fresh light on the effects that instruction in the BCC has on the evolution of CA, SPCC, and WTC. Thus, given that these constructs change over time (Hodis et al., 2010; Hodis & Hodis, 2012; McCroskey & Richmond, 1987), this research assesses whether instruction in the BCC can result in concomitant decreases in average CA levels and increases on mean SPCC and WTC. Second, it advances current understanding of the interplay among cross-sectional and longitudinal relations among these constructs. In particular, by proposing a theoretical model that accounts for how change in CA relates to changes in SPCC and WTC and informs on how initial levels of the constructs impact subsequent changes in them, this study brings to light theoretically important and practically significant aspects of how these constructs relate to one another during the semester in which students are enrolled in the BCC. Finally, by comparing and contrasting cross-sectional and longitudinal patterns of relations among communication apprehension, self-efficacy, and willing—
ness to communicate, this research underlines the potential opportunities that appropriately-tuned instruction in BCC offers for lowering student apprehension while, at the same time, enhancing communication self-efficacy, and willingness to communicate.

THEORETICAL PERSPECTIVE

Communication Apprehension (CA)

The first comprehensive conceptualization of the construct regarded CA as being a broadly based feeling of anxiety related to oral communication (McCroskey, 1997). Subsequently, the conceptualization was expanded to include all types of communication, and to pertain not only to anxiety related to actually communicating but also to fear associated with anticipating communication encounters (McCroskey, 1984, 1997). Research targeting communication apprehension is broad and extensive (see Daly & Miller, 1975; McCroskey, 1970, 1977, 1978 for some early accounts). The current investigation, focusing on trends associated with the BCC, involves CA that relates to public speaking and, thus, reflects people’s apprehension related to communicating in this specific context (McCroskey, 1997).

CA can be attributed to a combination of genetic factors and upbringing/learning (McCroskey, 1982, 1997; see also Bodie, 2010; Hsu, 2009; McCroskey & Richmond, 1987). With regards to CA related to public speaking, the type of the public speaking assignment (e.g., impromptu), the novelty and/or unfamiliarity of a situation, its level of formality, and the degree of attention one receives from others all influence the level of one’s apprehension (McCroskey, 1997; see also Beatty &
Friedland, 1990; Buss, 1980; Witt & Behnke, 2006). Noting also that CA related to speaking in public has been found to be “the best predictor of performance anxiety” (Beatty & Friedland, 1990, p. 146), these findings give some indication regarding why in BCC most students face increased levels of uncertainty and stress when getting ready to deliver their public speeches.

Communicative behaviors of people having low vs. high apprehension levels differ considerably (see Dwyer, Carlson, & Kahre, 2002 for a detailed discussion). Specifically, highly apprehensive individuals disclose less information about themselves, have a more negative image about themselves, make few positive self-statements, participate less in classroom activities and discussions, and talk less with their teachers than their low CA counterparts (Beatty, Frost, & Stewart, 1986; Martin, Valencic, & Heisel, 2002; McCroskey & Richmond, 1987). In addition, people who are highly apprehensive are more lonely, tend to withdraw more from situations where communication is necessary (Richmond & McCroskey, 1989), and are regarded by peers as exhibiting “behaviors that would lessen their desirability and worth as interaction partners” (Colby, Hopf, & Ayres, 1993, p. 222).

CA is an important “causal agent in student success” (McCroskey, Booth-Butterfield, & Payne, 1989, p. 100), in both academic and interpersonal areas. In particular, CA is negatively associated with self-esteem (Vevea, Pearson, Child, & Semlak, 2009), student retention in college (Ericson & Gardner, 1992; McCroskey, 1977; McCroskey & Andersen, 1976; McCroskey et al., 1989), help-seeking behavior (Nelson, Whitfield, & Moreau, 2012), integration into the wider university community
(Nelson et al., 2012), self-efficacy related to both public speaking courses and college in general (Dwyer & Fus, 1999), as well as ability to pay attention, understand, and recall class content (Booth-Butterfield, 1988), and is positively related to a tendency to avoid meeting a faculty or talking to another fellow student (McCroskey & Sheahan, 1978). In this light, it is not surprising that CA was found to have a negative relation with GPA (McCroskey & Andersen, 1976; but see also Dwyer & Fus, 1999). Interestingly, students’ CA does not seem to be related to the instructional style paradigm employed (Wolfsen, 2005). Several strands of communication research have analyzed how the CA of students evolves (e.g., Beatty & Andriate, 1985; Carlson et al., 2006; Duff, Levine, Beatty, Woolbright, & Park, 2007; Dwyer et al., 2002; Dwyer & Fus, 1999, 2002; Howe & Dwyer, 2007; Rubin, Graham, & Mignerey, 1990; Rubin, Rubin, & Jordan, 1997; Sidelinger, Myers, & McMullen, 2011). Results generally seem to point that the (public speaking related) communication apprehension of students decreases over time.

**Communicative Self-Efficacy Beliefs**

A recent review of the broader literature on academic self-efficacy (see Hodis & Hodis, 2012) provides links that connect it with communication research centered on self-perceptions of communicative competence. In addition, it shows that the SPCC scale (McCroskey & McCroskey, 1988) can be an effective measure to gauge communicative self-efficacy across four communication contexts, including public speaking. Importantly, findings in Hodis and Hodis (2012) show that students’ self-efficacy beliefs related to communication in public
speaking settings increased linearly during a semester in which students were enrolled in a BCC.

In general, people’s behavior across various life and academic settings is strongly influenced by self-efficacy beliefs that are domain-specific (Schunk & Pajares, 2005). These kinds of beliefs reflect individuals’ perceptions that they are capable of organizing and employing in an effective manner, whatever relevant skills they possess, in order to achieve their specific goals (Bandura, 1997). In the domain of communication, own perceptions of competence, rather than actual competence itself, have been shown to exercise a strong influence on corresponding decision-making processes related to communication (McCroskey, 1997; McCroskey & McCroskey, 1988).

Understanding self-efficacy as a “generative capability” (Bandura, 1997, p. 36) that organizes and coordinates subordinate (sub)skills helps shed some light on why people having near-identical levels of communication skills related to public speaking do sometimes exhibit widely different patterns of actual performance. Additionally, because self-efficacy beliefs shape the process of goal-selection in achievement settings (Friedman et al., 2009), it is likely that students’ choice of goals in the BCC is strongly influenced by the magnitude of their specific self-appraisals regarding communication in the given context (Hodis & Hodis, 2012). This argument is further supported by research findings showing: (a) communication courses that were effective in enhancing student communicative self-efficacy also brought about additional desirable outcomes, such as a decrease in attrition rates (Rubin et al., 1997), and (b) people who perceive themselves as having low efficacy
with regards to communicating with strangers and acquaintances also report unproductive learning experiences and poor communication with teachers, aspects that can jointly contribute to underachievement (Myers & Bryant, 2002; Myers, Martin, & Mottet, 2002; Rosenfeld et al., 1995).

Willingness to Communicate (WTC)

WTC (McCroskey, 1986, 1992, 1997; McCroskey & Richmond, 1987) “is the one overwhelming communication personality construct which permeates every facet of an individual’s life and contributes significantly to the social, educational, and organizational achievements of the individual” (Richmond & Roach, 1992, p. 104). Taking into account that teachers evaluate more positively (and have higher academic expectations of) students who are more willing to engage in communication (McCroskey, Daly, & Sorensen, 1976; McCroskey & Richmond, 1990; Richmond & McCroskey, 1989), it is clear that WTC plays a pivotal role in the learning-teaching process. At the social level, students who are more willing to communicate have also more friends and see their school experience as more rewarding than those students who are less willing to communicate (McCroskey & Richmond, 1990). These findings underscore both the importance of employing, in a communication classroom, adequate strategies aimed at increasing students’ WTC and the dangers associated with equating unwillingness to do so with a lack of class preparation.

McCroskey (1992, 1997) operationalizes WTC as reflecting “individual’s predisposition to initiate communication with others” (McCroskey, 1997, p. 77, emphasis in
original), given that she/he “has free choice to initiate or avoid communication” (McCroskey, 1992, p. 20). A thorough examination of the communication literature reveals that class size as well as student introversion, anomie and alienation, self-esteem, cultural divergence, openness to new experiences, communication skills level, CA, and self-perceived communication competence are possible antecedents of WTC (Byrne et al., 2012; Hodis et al., 2010; MacIntyre, 1994; MacIntyre et al., 1999; McCroskey, 1997; McCroskey & Richmond, 1987, 1990; Sidelinger, Bolen, Frisby, & McMullen, 2012).

Research concentrating on WTC in the public speaking context is relatively scant. However, the results available show significant variability in students’ WTC scores related to speaking in public, possibly illustrating a wide range of determinants associated with students’ cultural and educational environments (see Asker, 1998; Barraclough, Christophel, & McCroskey, 1988; Hodis et al., 2010; McCroskey, 1986, 1992; Richmond & McCroskey, 1995; Sallinen-Kuparinen, McCroskey, & Richmond, 1991). Nonetheless, some important factors influencing public speaking related WTC may transcend cultural and/or educational context differences. Specifically, it is possible that the anticipation (or the actual performance) of a public speech may trigger cognitive and psychological processes, which in turn, may impact people’s willingness to speak in public (Miller & Stone, 2009). In addition, it is likely that public speaking related communication apprehension and self-efficacy beliefs (indicating one’s confidence that one can use whatever skills one possesses to give a good public speech) interact to affect one’s WTC in public speaking settings. Point in case, Grace and Gilsdorf
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(2004) posit that: (1) a good oral presentation is grounded on confidence rather than brilliance, and (2) “apprehensive students will speak better or more willingly when confident and worse when afraid” (p. 171).

In sum, it appears that the magnitude, as well as the evolution of WTC in public speaking settings, is affected by cultural and educational environments. Moreover, recent findings offer encouraging evidence that WTC in public speaking contexts can be enhanced, given appropriate instruction/effective interventions (see Ayres, Schliesman, & Sonandre, 1998; Miller & Stone, 2009; Weaver, 2007). Furthermore, with regards to the specific case of the BCC, Hodis and colleagues (2010) show that during a semester in which students were enrolled in a BCC, their WTC scores related to public speaking increased, on average, with 11% over their corresponding WTC levels at the beginning of the course. These results are in line with those reported by Morreale, Hackman, and Neer (1998) who found that students enrolled in a laboratory-centered basic interpersonal course reported increases in own perceptions of willingness to communicate between the beginning and end of the class.

Interrelationships among Communication Apprehension, Communicative Self-Efficacy, and Willingness to Communicate

Several studies investigated cross-sectional relationships among some (or all) of these constructs. For instance, MacIntyre (1994) and MacIntyre and colleagues (1999) found that significant negative relations exist between CA on the one hand, and WTC and SPCC on the other. However, it is unclear whether these studies used
data from students enrolled in a BCC. Importantly, the CA-WTC relationship was found in only one of the investigations (i.e., MacIntyre, 1994) and not in the other. This finding is surprising in light of McCroskey and Richmond’s (1987) unequivocal argument stating that one’s “level of CA is probably the single best predictor of his or her willingness to communicate” (p. 142). Additionally, the MacIntyre studies also pointed out that at the cross-sectional level a positive relation exists between SPCC and WTC. This finding is consistent with the observation that “people who perceive themselves competent in communicating are more willing to initiate a communication” (Ghonsooly, Khajavy, & Asadpour, 2012, pp. 3-4). When reviewing these findings it is important to keep in mind that although cross-sectional studies can provide snapshots of the relations among given constructs, they offer access to less information than longitudinal studies do. Moreover, noting that “potentially explanatory variables in a cross-sectional setting may not be as relevant when viewed longitudinally” (Ployhart & Vandenberg, 2010, p. 96; see also Maxwell & Cole, 2007), it is unclear whether relations detected at the cross-sectional level are informative for describing longitudinal interrelations. Furthermore, in a longitudinal framework, time-related changes are measured directly, whereas in cross-sectional studies, conclusions about change can only be made indirectly (Anstey & Hofer, 2004; Williams, Edwards, & Vanderberg, 2003). This aspect is of crucial importance as “there is a truism about applied research that an inadequate concept of change leads to diminished or misguided applied research” (Golembiewski, Billingsley, & Yeager, 1976, p. 133, emphasis in original).
As far as longitudinal relations among apprehension, self-efficacy, and WTC are concerned, with one exception (details follow), the extant literature is largely silent. Considering that the need to investigate these constructs across time has been recognized over two decades ago (e.g., Rubin et al., 1990), this paucity is surprising. This lack of longitudinal research becomes even more puzzling when one notes that the given conceptualizations of the constructs regard them as dynamic entities. A good example illustrating the (implicit or explicit) dynamic operationalization of the constructs is offered by the plethora of studies presenting various strategies aiming at reducing CA, increasing SPCC, or heightening WTC (Ayres & Hopf, 1987, 1990; Ayres et al., 1998; Kelly & Keaten, 2000; McCroskey, 1972, 1977, 1984).

The lone study assessing longitudinal relations among some of these constructs (i.e., Rubin et al., 1997) found a negative association between change in CA and change in SPCC. This result indicates that people whose CA scores decreased slowly had also smaller increases in SPCC compared to peers who exhibited a more abrupt decrease in CA. Notably, these findings (as is the case for the findings in the MacIntyre, 1994 and MacIntyre et al., 1999 studies) refer to overall constructs, which means that conclusions are grounded on the analyses of indexes obtained as averages across dyadic, small group, large meetings and public speaking contexts.

In sum, the overwhelmingly cross-sectional nature of the extant communication research is able to provide only limited information regarding how these important constructs relate to each other over time throughout the
BCC. Thus, conducting longitudinal investigations of dynamic relations among change processes in the framework of BCC is pivotal because the BCC is particularly well suited to provide students with a host of opportunities leading to meaningful mastery experiences in given communication contexts (e.g., being able to perform increasingly elaborate communicative tasks, such as persuasive public speeches). Noting that mastery experiences are the most influential driver of people's self-efficacy beliefs (Bandura, 1997; Usher & Pajares, 2008), and recognizing the importance of communicative self-efficacy beliefs, communication apprehension, and willingness to communicate for the effectiveness of communication instruction in the BCC, it appears that mapping how CA, SPCC, and WTC relate both within and across time in the context of BCC can provide important fresh knowledge. To this end, the study undertakes an in-depth investigation of both cross-sectional and longitudinal relationships among these constructs by means of three waves of data collected from students enrolled in a semester-long BCC. To align the scope of the investigation with the focus of instruction in the given course, which was centered on public speaking, the research analyzes the aforementioned relationships as they relate specifically to the public speaking communication context.

In line with the theoretical rationale delineated previously, a theoretical model was employed to offer a conceptual representation of both cross-sectional and longitudinal relations characterizing CA, SPCC, and WTC. This model, which is presented in Figure 1, posits that: (a) initial apprehension and self-efficacy levels (i.e., CA and SPCC latent intercepts) are predictors of
Figure 1. Conceptual Representation of Cross-Sectional and Longitudinal Relations Among Initial Levels and Rates of Change for CA, SPCC, and WTC. Ai = initial apprehension; Ci = initial self-efficacy; Wi = initial WTC; As = change in apprehension; CS = change in self-efficacy; WS = change in WTC; b = regression coefficient summoning the relations between a given predictor and criteria (for example, b_{ci|ai} reflects the influence of Ai on Ci); cov = covariance. In order to prevent clogging the diagram, three latent factor covariances, namely the ones between the residuals of WTC latent intercept and the residuals of the WTC and SPCC latent slopes, as well as the one between the residual intercept and slope of SPCC are omitted.
WTC initial levels, and (b) initial apprehension and self-efficacy levels together with rates of change in apprehension and self-efficacy (i.e., CA and SPCC latent slopes) are predictors of changes in WTC. In addition, to account for the influence of CA on SPCC, the model also posits that (c) initial self-efficacy levels are predicted by initial apprehension levels and (d) rates of changes in self-efficacy are predicted by both initial levels and changes in apprehension. Consistent with this conceptualization, three research questions (RQs) are investigated in this study:

**RQ 1**: During the course of a semester in which students are enrolled in a BCC, does change in their communication apprehension predict changes in their self-efficacy and willingness to communicate?

**RQ 2**: During the course of a semester in which students are enrolled in a BCC, does change in students’ self-efficacy predict changes in their willingness to communicate?

**RQ 3**: Are there any differences between the static (cross-sectional) relations among the three constructs and their dynamic (longitudinal) counterparts?

**METHOD**

**Participants**

A total of 705 (319 female) undergraduate students took part in the study. Participants were enrolled in a BCC (focusing primarily on public speaking) at a university in the US. Seventy-four percent of the parti-
Participants were first-year students with the remainder being sophomores, juniors, and seniors. About 56% of the respondents had data for all three waves, with an additional 30% having recorded data for two waves.

**Procedure**

After receiving approval from the university’s IRB, all students enrolled in the BCC in that particular semester were invited to take part in the study. The questionnaires were administered during class time in the first, eighth, and fifteenth week of the semester. This particular schedule of data collection was chosen so that participants had not performed any public speeches prior to the first wave of data collection, performed at least one before the second administration, and had done one more public speech before the last administration.

**Measures**

Participants’ self-reports were employed to measure their CA, SPCC, and WTC related to public speaking. To this end, the Personal Report of Communication Apprehension (PRCA-24B; McCroskey, 1986), Self Perceived Communication Competence (SPCC; McCroskey & McCroskey, 1988), and Willingness to Communicate (WTC; McCroskey, 1986) instruments were used. The PRCA-24B comprised 24 items; for this research, only the six items pertaining to public speaking were employed. The answers were recorded on a 5-point Likert scale (ranging from 1 = strongly agree to 5 = strongly disagree). Thus, the scores can range between 6 and 30, with higher scores indicating higher levels of
Table 1

*Means (M), Standard Deviations (SD), and Reliabilities for Focal Variables at Times 1, 2 and 3*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTC_1</td>
<td>60.88</td>
<td>22.10</td>
<td>.88</td>
</tr>
<tr>
<td>WTC_2</td>
<td>63.95</td>
<td>22.57</td>
<td>.91</td>
</tr>
<tr>
<td>WTC_3</td>
<td>67.90</td>
<td>22.05</td>
<td>.90</td>
</tr>
<tr>
<td>SPCC_1</td>
<td>71.41</td>
<td>19.24</td>
<td>.90</td>
</tr>
<tr>
<td>SPCC_2</td>
<td>74.88</td>
<td>17.42</td>
<td>.90</td>
</tr>
<tr>
<td>SPCC_3</td>
<td>76.95</td>
<td>17.75</td>
<td>.91</td>
</tr>
<tr>
<td>CA_1</td>
<td>16.14</td>
<td>3.95</td>
<td>.89</td>
</tr>
<tr>
<td>CA_2</td>
<td>15.50</td>
<td>4.11</td>
<td>.90</td>
</tr>
<tr>
<td>CA_3</td>
<td>15.32</td>
<td>4.41</td>
<td>.91</td>
</tr>
</tbody>
</table>

*Note.* Reliabilities reported in this table are the \( \alpha \) coefficient of internal consistency (adjusted using Spearman-Brown formula for the length of scale).

public speaking related CA (McCroskey, 1986). The SPCC instrument comprised 12 items examining students’ perceptions of own ability to communicate effectively in various contexts. For this study, the three public speaking items were used. Participants’ answers on this scale were recorded on a scale ranging from 0 = completely incompetent to 100 = completely competent.

The WTC instrument comprised 20 items. In this research the three public speaking items were employed. Answers were recorded on a scale ranging from 0 = never to 100 = always willing to initiate communication when completely free choice was available. As is illustrated in Table 1, all constructs employed, at all time points, have excellent reliabilities that exceed 0.80.
Data Analytic Technique

To answer the three RQs, multivariate latent growth modeling (LGM) was employed. LGM is a powerful and versatile general data analytic system for longitudinal data, which includes traditional techniques (e.g., paired t-tests, repeated measures ANOVA, repeated measures MANOVA) as particular cases (Voelkle, 2007). LGM has several advantages that recommend it over its traditional alternatives: it requires less restrictive assumptions, is flexible, and can be employed to assess a variety of hypotheses that cannot be investigated by means of traditional techniques (Byrne, 2012; Byrne, Lam, & Fielding, 2008; Curran & Muthen, 1999; Curran, Obeidat, & Losardo, 2010; Duncan & Duncan, 2009; Voelkle, 2007).

One of the distinctive features of LGM is that it enables the concomitant study of both average trends in the population and of how individual change patterns differ from these mean trends (Byrne, 2012; Chan, 1998; Curran, 2000; Ram & Grimm, 2007). This versatility of LGM is in stark contrast with the fact that traditional longitudinal techniques can inform only on average patterns of change and relegate variability between people to the error term (Hess, 2000; Hodis et al., 2010; Hodis & Hodis, 2012; Lenzenweger, Johnson, & Willett, 2004). As a result of these limitations, traditional repeated-measures analyses, such as ANOVA, MANOVA, and MANCOVA, “are increasingly becoming perceived as somewhat inadequate in that they prevent researchers from seeking answers to interesting and important questions bearing on such differences” (Byrne, 2012, p. 313). Excellent presentations of LGM detailing the advantages of employing the procedure, can be found in
Bollen and Curran (2006) and Henry and Slater (2008). In this study, linear LGM (denoted in short linear growth model) is used.

To assess whether the proposed multivariate model (see Figure 1) offers a good description of the empirical data, several fit indices were employed: comparative fit index (CFI) (Bentler, 1990), Tucker-Lewis index (TLI) (Tucker & Lewis, 1973), and root-mean-square-error-of approximation (RMSEA) (Steiger, 1990). Following Hu and Bentler (1999), values of .95 and higher for CFI and TLI were used as benchmarks for good fit. For RMSEA, values below .05 were taken to indicate a very good fit and values between .05 and .08 to denote an acceptable fit (Browne & Cudeck, 1993).

RESULTS

To estimate the parameters of the model, this study used full information maximum likelihood (FIML, Arbuckle, 1996). This estimation technique allows researchers to include in the analysis all the information provided by all respondents (i.e., does not require any data purging) and is considered to be “one of the preferred methods to allow generalizations of results to the population” (Benner & Graham, 2009, p. 363). Analyses were conducted with Mplus version 6.11 (Muthen & Muthen, 1998-2010).

Consistent with findings from extant research (Hodis et al., 2010; Hodis & Hodis, 2012), in this study the dynamic influences of CA on SPCC and WTC, as well as of SPCC on WTC are operationalized in a linear growth modeling framework. Herein, to ease the flow of presentation, WTC, respectively SPCC, and CA stand
for the public speaking components of their respective constructs. The three research questions of interest are investigated by analyzing the relationships among initial levels and rates of change of these three constructs. Together, these six latent factors define and describe static and dynamic relationships among CA, SPCC, and WTC related to public speaking.

The proposed multivariate linear growth model had an excellent fit to the data: $\chi^2(17, N = 705) = 13.49$, $p = .70$, CFI = 1.00, TLI = 1.00, RMSEA = .00 and, thus, its parameters can be meaningfully interpreted. In any multivariate model of change, the most important parameters are the ones linking the growth factors (i.e., initial levels and rates of change in CA, SPCC, and WTC for this model). The interpretation of these parameters allows one to get valuable information on how various aspects of change in one construct are related to similar aspects of change in the other constructs.

At the beginning of the semester, initial levels of WTC and SPCC were positively associated (see Table 2 for a complete summary of these results; all parameters discussed subsequently are statistically significant at the .05 level). On average, a difference of one standard deviation (SD) in self-efficacy at Time 1 was associated with a difference of 0.28 SD units in the initial level of WTC, when controlling for CA (see Figure 2 for a graphical summary). Thus, students who had higher initial levels of self-efficacy (i.e., of SPCC) also began the semester with higher levels of WTC. In addition, initial levels of WTC were negatively associated with initial levels of CA. On average, an increase of one SD in the initial CA was associated with a decrease of 0.54 SD.
units in initial WTC (controlling for SPCC), indicating that students who had lower apprehension at the beginning of the course also had higher WTC than more apprehensive students. In standardized terms, the effect of initial apprehension on initial willingness to communicate (controlling for self-efficacy at the beginning of the semester) is approximately twice as strong as the corresponding standardized effect of initial self-efficacy levels. This is an important finding, further underlined by the fact that variation in initial levels of self-efficacy and apprehension accounted for about 52% of the variability in initial levels of WTC ($R^2 = .52$).

Both initial self-efficacy and rate of change in self-efficacy exhibited positive associations with the WTC rate of change. All else being the same, one SD difference in initial SPCC levels (respectively rate of change) was associated with 0.61 (respectively 0.77) SD units difference in WTC rate of change (see Figure 2 and Table 2). Thus, students who at the beginning of the BCC had higher self-efficacy levels with respect to public speaking and/or exhibited faster increases in these levels during the semester also showed a more rapid increase in their WTC scores than students who had lower initial SPCC levels and/or slower increases in SPCC.

With respect to the influence of apprehension on the WTC rate of change, initial levels of CA were positively associated with the WTC rate of change. Specifically, one SD unit increase in CA intercept was associated with 0.53 SD units increase to WTC slope. This is an interesting finding that parallels the one obtained in univariate settings: Although at the cross-sectional level, CA and WTC are negatively correlated, the relationship between CA and change in WTC is positive.
Figure 2. Summary of Standardised Cross-Sectional and Longitudinal Relations among Initial Levels and Rates of Change for CA, SPCC, and WTC. \( A_i \) = initial apprehension; \( C_i \) = initial self-efficacy; \( W_i \) = initial WTC; \( A_s \) = change in apprehension; \( C_s \) = change in self-efficacy; \( W_s \) = change in WTC.
### Table 2
*Summary of the Results of Fitting the Multivariate Latent Growth Model*

<table>
<thead>
<tr>
<th>Parameter Symbol</th>
<th>Label</th>
<th>Unstandardized (Standardized) Parameter Estimate (PE)</th>
<th>Standard Error (SE)</th>
<th>z ratio</th>
<th>Two-tailed p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>b_wi</td>
<td>ai</td>
<td>RC of WTC TIS on CA TIS</td>
<td>-3.33 (-0.54)</td>
<td>0.39</td>
<td>-8.53</td>
</tr>
<tr>
<td>b_wi</td>
<td>ci</td>
<td>RC of WTC TIS on SPCC TIS</td>
<td>0.32 (0.28)</td>
<td>0.09</td>
<td>3.60</td>
</tr>
<tr>
<td>b_ws</td>
<td>ai</td>
<td>RC of WTC TRC on CA TIS</td>
<td>2.40 (0.53)</td>
<td>0.82</td>
<td>2.93</td>
</tr>
<tr>
<td>b_ws</td>
<td>ci</td>
<td>RC of WTC TRC on SPCC TIS</td>
<td>0.51 (0.61)</td>
<td>0.17</td>
<td>3.02</td>
</tr>
<tr>
<td>b_ws</td>
<td>as</td>
<td>RC of WTC TRC on CA TRC</td>
<td>-0.39 (-0.05)</td>
<td>1.17</td>
<td>-0.33</td>
</tr>
<tr>
<td>b_ws</td>
<td>cs</td>
<td>RC of WTC TRC on SPCC TRC</td>
<td>0.90 (0.77)</td>
<td>0.36</td>
<td>2.51</td>
</tr>
<tr>
<td>b_ci</td>
<td>ai</td>
<td>RC of SPCC TIS on CA TIS</td>
<td>-2.68 (-0.49)</td>
<td>0.26</td>
<td>-10.11</td>
</tr>
<tr>
<td>b_cs</td>
<td>ai</td>
<td>RC of SPCC TRC on CA TIS</td>
<td>-0.61 (-0.16)</td>
<td>0.35</td>
<td>-1.72</td>
</tr>
<tr>
<td>b_cs</td>
<td>as</td>
<td>RC of SPCC TRC on CA TRC</td>
<td>-2.10 (-0.33)</td>
<td>0.77</td>
<td>-2.72</td>
</tr>
<tr>
<td>(\Sigma_{i=1}^{2}) wi/Preds</td>
<td>PV WTC TIS</td>
<td>167.81</td>
<td>26.00</td>
<td>6.45</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>(\Sigma_{i=1}^{2}) ws/Preds</td>
<td>PV WTC TRC</td>
<td>123.09</td>
<td>52.38</td>
<td>2.35</td>
<td>.02</td>
</tr>
</tbody>
</table>
### Table 2 (continued)

<table>
<thead>
<tr>
<th>Parameter Symbol</th>
<th>Label</th>
<th>Unstandardized (Standardized) Parameter Estimate (PE)</th>
<th>Standard Error (SE)</th>
<th>z ratio</th>
<th>Two-tailed p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\sigma^2_{\text{clai}}$</td>
<td>PV SPCC TIS</td>
<td>201.44</td>
<td>22.62</td>
<td>8.91</td>
<td>&lt; .01</td>
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<tr>
<td>$\sigma^2_{\text{cs</td>
<td>Prcs}}$</td>
<td>PV SPCC TRC</td>
<td>118.04</td>
<td>32.44</td>
<td>3.64</td>
</tr>
<tr>
<td>$\sigma^2_{\text{ai}}$</td>
<td>Variance CA TIS</td>
<td>9.07</td>
<td>0.90</td>
<td>10.09</td>
<td>&lt; .01</td>
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<tr>
<td>$\sigma^2_{\text{as}}$</td>
<td>Variance CA TRC</td>
<td>3.44</td>
<td>1.22</td>
<td>2.82</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>$\sigma_{\text{wi</td>
<td>wss</td>
<td>Prcs}}$</td>
<td>PC of WTC TIS and TRC</td>
<td>-107.67</td>
<td>31.38</td>
</tr>
<tr>
<td>$\sigma_{\text{ci</td>
<td>cs</td>
<td>Prcs}}$</td>
<td>PC SPCC TIS and TRC</td>
<td>-112.22</td>
<td>22.39</td>
</tr>
<tr>
<td>$\sigma_{\text{wi</td>
<td>cs</td>
<td>Prcs}}$</td>
<td>PC WTC TIS and SPCC TRC</td>
<td>37.18</td>
<td>13.37</td>
</tr>
<tr>
<td>$\sigma_{\text{as</td>
<td>ai}}$</td>
<td>Covariance CA TIS and TRC</td>
<td>0.28</td>
<td>0.80</td>
<td>0.35</td>
</tr>
</tbody>
</table>

**Note.** RC = regression coefficient; PV = partial variance after taking into account the linear effect of the predictor(s); PC = partial covariance after taking into account the linear effect of the predictor(s); TIS = true initial status; TRC = true rate of change.
(see Hodis et al., 2010). Thus, students who had lower initial levels of CA increased more slowly their WTC than their more apprehensive counterparts. Interestingly, the magnitude (but not the direction) of the relationships between initial apprehension, on the one hand, and initial WTC (respectively change in WTC) on the other, was about the same (standardized regression coefficients of -.54 and .53, respectively). The relationship between change in WTC and change in CA was not statistically significant, thus pointing out that knowledge of how students’ CA scores changed (decreased) during the given semester did not offer any information about the way their WTC scores increased throughout the same period. The four latent factors taken together (i.e., SPCC intercept and slope and CA intercept and slope) accounted for about 34% of variation in the WTC rate of change.

After taking into account the effect of predictors on WTC latent intercept and slope, the residual covariance between these factors was negative. This indicates that after accounting for the effects of the predictors, higher true WTC initial levels were associated with slower change in WTC. This negative covariance should not be taken to mean that students with high initial WTC levels experienced a decrease in these levels during the semester. On the contrary, it is quite likely that these students experienced an increase in WTC levels but did so at a slower rate than that of students who started the semester with lower WTC levels.

Fitting the model also revealed a negative relationship between initial levels of SPCC and CA. Specifically, an increase of one SD in the initial level of apprehension was associated with a decrease of 0.49 SD units in self-efficacy, indicating that students who were
more apprehensive at the beginning of the semester had also lower self-efficacy than students who were less apprehensive. Moreover, in terms of the relationship between the two rates of change, faster (i.e., more abrupt) decreases in apprehension were associated with larger increases in self-efficacy. No significant relationship was found between change in self-efficacy and initial apprehension. Furthermore, no significant relationship was recorded between initial levels of and subsequent decreases in apprehension. Thus, students’ apprehension level at the beginning of the semester was not systematically related to their subsequent change in CA.

Variability in initial apprehension levels accounted for about 24% of variation in initial self-efficacy ($R^2 = .24$); initial levels and rates of change in CA, taken together, accounted for about 14% of variation in self-efficacy rates of change ($R^2 = .14$). A comparison of these two $R^2$ values reveals that CA played a more important role in predicting initial levels of self-efficacy than it did in predicting rates of change in the same construct. More specifically, initial levels of CA alone predicted a higher percentage of variation in SPCC intercept than both true initial levels and rates of change together did in the SPCC slope. The residual covariance between initial levels and rates of change in SPCC was negative, showing that after the influence of predictors was taken into account, higher true SPCC initial levels were associated with lower true SPCC rates of change. This result is in line with the trends uncovered in the unconditional univariate case (see Hodis & Hodis, 2012).
In sum, fitting the multivariate growth model provided important information that helps answer the three RQs of the study. First, answering RQ1, change in CA predicted change in WTC but failed to account for change in self-efficacy beliefs. Second, providing an answer to RQ2, change in self-efficacy was a significant predictor of change in WTC. Third, in relation to RQ3, important differences were revealed when comparing static (cross-sectional) and dynamic (longitudinal) relations among the three constructs. Specifically, (a) initial CA was negatively related to initial WTC but positively related to change in WTC; (b) initial CA predicted significantly initial self-efficacy beliefs but not change in these beliefs; (c) although initial self-efficacy had positive relations with both initial level and change in WTC, the relations were more than 200% stronger for change in WTC; (d) although initial CA had very similar relations with initial self-efficacy and WTC, it predicted significantly change in WTC but not change in self-efficacy; and (e) the opposite was true in terms of rates of change, i.e., change in apprehension predicted change in self-efficacy but not change in WTC.

DISCUSSION

In this section, an in-depth discussion of the results is conducted. The implications of the findings for the BCC are highlighted throughout. In an attempt to situate these findings within the realm of extant communication research, we tried to draw parallels with relevant work. However, the extreme paucity of communication research focusing on change in these constructs in the specific context of public speaking made...
this endeavor impossible. As a result, we were left with no other choice but to relate our findings to results that either pertain to the overall constructs (i.e., that incorporate public speaking, large meetings, small groups, and dyadic contexts) or are not explicit with regards to the attendant context(s).

The results of this study make a significant contribution to understanding the role of communicative self-efficacy, as the key transmission mechanism linking communication apprehension and willingness to communicate of undergraduate students enrolled in a BCC. In line with findings derived from univariate growth models (Hodis et al., 2010; Hodis & Hodis, 2012), the results pertaining to the multivariate model indicate that even after the effect of predictors was taken into consideration, for both self-efficacy and willingness to communicate in public speaking settings, students who began the semester with high (vs. low) levels of the given construct were likely to have exhibited slower (vs. more accentuated) increases during the semester. From a pedagogical standpoint, these findings point out that students who begin the BCC with relatively high levels of WTC and/or SPCC related to speaking in public can be expected to show a less marked improvement along these dimensions than their counterparts who have lower levels of SPCC and WTC.

With respect to the linkage between initial level and subsequent evolution, CA does not fit the pattern observed for WTC and SPCC, as the results indicate that there was no significant relationship between the level of apprehension at which one began the semester and the magnitude of the subsequent decrease in CA. This pivotal result underlines the fact that there is no con-
clusive evidence pointing out that highly apprehensive students who participate in a BCC remain (or even worse, become more) apprehensive. On the contrary, it shows that regardless of how apprehensive one is at the beginning of the semester, participation in the BCC can be associated with either increases or decreases in apprehension levels regarding public speaking. Thus, the result underlines both the opportunities and the responsibilities that need to accompany the employment of various strategies designed to reduce students’ apprehension. One such strategy was proposed by Witt and Behnke (2006) who suggested that it might be advantageous to rank public speaking assignments from least to most threatening. The benefits of this approach might be enhanced if students also take part in communication centers (or speech laboratories) (Nelson et al., 2012). Alternatively, grounded on the positive relationship found between public speaking related CA and discrepancy (a measure of the perceived difference between one’s imagined communication interaction and the real encounter; Honeycutt, Choi, & DeBerry, 2009), it is possible that cognitive modification can provide an efficient way to reduce CA related to public speaking compared to other alternatives (e.g., visualization and systematic desensitization; Honeycutt et al., 2009).

The lack of significant association between initial apprehension and subsequent change in apprehension is not in line with Rubin et al.’s (1997) work. Rubin and colleagues found that students who were highly apprehensive at Time 1 showed a more abrupt decrease in CA than their moderate or respectively low apprehensive counterparts. A possible explanation of the difference in findings stems from the fact that in Rubin et al.’s study,
students were classified as having high, moderate, and low levels of CA. This strategy is associated with loss of information (by converting a continuous variable into an ordinal one; see Butts & Ng, 2009; MacCallum, Zhang, Preacher, & Rucker, 2002) and could generate arbitrary classifications of cases having scores located in the vicinity of the cut-points defining the three categories. The next aspect of this discussion integrates results pertaining to both cross-sectional and dynamic relations among the three constructs. To underline the implications of findings in a comprehensive manner, a graphical summary of these interrelations is provided in Figure 3. An examination of Figure 3 reveals that students’ initial WTC levels were predicted by their initial levels of apprehension and self-efficacy. Specifically, the higher one’s initial SPCC level and the lower one’s initial CA, the higher the initial WTC was as well. These results are in line with the cross-sectional results in MacIntyre (1994) who found that SPCC had a positive influence on WTC, whereas CA had a negative influence on both SPCC and WTC. However, in departing from the results in the MacIntyre (1994) study (indicating that the effect of SPCC on WTC was much stronger than the corresponding effect of CA), this research found that the effect of initial apprehension on WTC was about twice as large as the effect of initial self-efficacy. In addition, findings from this study are also partly in line with results from MacIntyre et al. (1999) who replicated findings from MacIntyre (1994) with respect to the influence of CA on SPCC and of SPCC on WTC but did not find support for the negative effect of CA on WTC. One possible explanation of the differences between findings in this investigation and the results of the
Figure 3. Schematic Representation of the Summary of Cross-Sectional and Longitudinal Relationships Among CA, SPCC, and WTC. PAW = positively associated with, i.e., **bolded** text at the base of the arrow corresponds to **bolded** text at the top of the arrow and *italic* text at the base of the arrow is associated with *italic* text at the top of the arrow. NAW = negatively associated with, i.e., **bolded** text, at the base of the arrow corresponds to *italic* text at the base of the arrow, and *italic* text at the base of the arrow corresponds to **bold** text at its top. For example, the PAW arrow between Lower/Higher Initial SPCC and Lower/Higher Initial WTC indicates that Lower Initial SPCC was associated with Lower Initial WTC and that Higher Initial SPCC was associated with Higher Initial WTC. The NAW arrow between Lower/Higher Initial CA and Lower/Higher Initial WTC indicates that Lower Initial CA was associated with Higher Initial WTC and that Higher Initial CA was associated with Lower Initial WTC.
aforementioned studies is that this work uses only the public speaking context of WTC, SPCC, and CA.

Initial levels of both self-efficacy and apprehension were found to be significant predictors of change in WTC. Specifically, the higher one's initial SPCC and CA levels, the more rapid one's increase in WTC was (see Figure 3). These findings underscore that communicative self-efficacy beliefs with which students enter the BCC are important predictors of both initial levels and changes in WTC. Thus, if self-reported WTC levels are indicative of actual WTC behavior in public speaking settings, these results offer support to McCroskey and McCroskey’s (1988) claim that the SPCC is an important factor that influences people’s actual communication behavior.

The finding showing that students who exhibited higher true initial CA levels increased their WTC faster than their somewhat less apprehensive counterparts is very interesting. An examination of Figure 3 provides important information that sheds more light on this effect: higher initial levels of apprehension were associated with lower initial levels of WTC and lower initial levels of WTC were associated with higher WTC rates of change. Thus, higher levels of apprehension were associated with higher rates of change (i.e., steeper increases in WTC) both directly and by means of their influence on WTC initial levels. These results indicate that it is possible for highly apprehensive students to overcome their apprehension regarding public speaking and become more willing to communicate in this context. Some promising paths toward this end might be to encourage students to make full use of resources available (e.g., speech center services, speech laboratories or...
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Although how apprehensive students were at the beginning of the course was related to how much their WTC changed, this study found no significant relationship between change in CA and change in WTC. In other words, whether one’s apprehension score decreased, stayed relatively unchanged, or increased during the given semester had no bearing on how one’s WTC score changed in the same period of time. The result is reflected in Figure 3 by the absence of any link between change in CA and change in WTC. This conclusion differs from the one reached by MacIntyre (1994) who posited that “as a person becomes more anxious about communicating” (p. 138), her level of WTC “should decline” (p. 139).

On the other hand, change in students’ self-efficacy beliefs was positively related to change in their WTC levels, in that people experiencing a marked increase in SPCC were likely to also exhibit a more pronounced increase in WTC than individuals characterized by smaller improvements in SPCC. This finding has pivotal implications for instruction in BCC for it points out how important it is for someone teaching a public speaking course to design class activities and assignments with a dual focus: to broaden actual communication skills and to enhance students’ self-efficacy beliefs with regard to those very skills. If an instructor is successful in doing so, most likely she/he will be rewarded with rapid increases in students’ WTC as well.
As expected, at the beginning of the semester, initial self-efficacy and apprehension were negatively related; the higher one’s initial CA, the lower one’s initial SPCC was. This finding is in line with MacIntyre’s (1994) and MacIntyre et al.’s (1999) conclusions, and underlines that at entry in the BCC, participants who were highly apprehensive were also characterized by low levels of SPCC. From a communication instruction standpoint, this result strengthens the evidence pointing toward a cross-sectional link between high levels of apprehension and low levels of SPCC. Taking this knowledge into consideration, public speaking related tasks can be designed in a non-threatening manner that can also help build student self-efficacy beliefs in own skills (see Dwyer & Davidson, 2012; Dwyer et al., 2002; Nelson et al., 2012; Witt & Behnke, 2006 for possible startegies). However, it is important to note that the negative effects of heightened apprehension on initial self-efficacy did not persist throughout the semester, as indicated by the fact that students’ increase in self-efficacy beliefs was not related to how apprehensive they were at the beginning of the course. Interestingly, what did affect change in SPCC was change in CA: the slower one’s decrease in CA was, the slower her/his increase in SPCC was as well. This finding is similar to that reported in Rubin et al. (1997).

The results of this investigation underline several interesting implications regarding the development of (public speaking related) self-efficacy in BCC. First, it is likely that regardless of how apprehensive students are at the beginning of the course, it is possible to help them decrease their apprehension. Second, the level of communicative apprehension with which students enter the

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BCC has no bearing on how much they can enhance their corresponding self-efficacy beliefs. On the contrary, it is change in apprehension that influences change in self-efficacy. This finding is in line with the point of view recently made by Sidelinger and colleagues (2011) with regards to the BCC: “ultimately, students who experience a reduction in their communication apprehension are also likely to experience an increase in their self-perceived communication competence” (p. 235). Thus, instruction in BCC can (and, as the results of this study show, sometimes does) have a positive impact on communicative self-efficacy beliefs both directly and by means of reducing CA. However, a cautionary note is in order here: Because a relatively low proportion of variability in rate of change in SPCC (about 14%) can be attributed to variability in CA, these results indicate that some other factors besides CA affect the evolution of self-efficacy beliefs. Thus, enhancing students’ self-efficacy with regards to public speaking in a BCC would require a comprehensive strategy that goes beyond reducing students’ levels of apprehension in the given context. One possibly useful strategy in this sense could take into account that mastery experiences have been shown to have strong and consistent effects on the development of people’s self-efficacy beliefs (Bandura, 1997; Usher & Pajares, 2008). Thus, it is likely that if assignments in BCC expose students to gradually more challenging (but doable) tasks related to speaking in public, an increasing number of them could benefit from having meaningful and consistent mastery experiences in this domain. This strategy is in line with Beatty and Andriate (1985), who warn instructors that when the majority of the students have had little or no practice of
speaking in public, if they have a negative experience while performing their first speeches there is a heightened chance that they will avoid communication in similar future encounters. Another possibly fruitful approach could be to enhance student-to-student (classroom) connectedness in the BCC. This strategy may be able to contribute to reducing students’ CA related to public speaking and increase their SPCC and learning (Prisbell, Dwyer, Carlson, Bingham, & Cruz, 2009; Sidelinger et al., 2011).

From a pedagogical standpoint, findings from this work provide support for a teaching philosophy that does not treat constructs in isolation but attempts to use improvement in one to foster positive changes in the others. For example, as the results of this study demonstrate, by using strategies that are effective in accelerating the decline in students’ apprehension levels, educators can also help bring about a more accentuated increase in their communicative self-efficacy. Furthermore, as the rate of change in communicative self-efficacy was found to be positively related to WTC rate of change, it follows that, indirectly, by means of communicative self-efficacy, the same strategies could also be helpful in boosting the increase in students’ levels of WTC.

**Limitations of the Present Study and Future Directions of Inquiry**

First, having access to data collected at three time points restricted the investigation to linear models of growth and decline. Although the linear patterns of change that were studied received support from the empirical data, with four or more measurements it would
have been possible to test whether changes were continuous, or whether they stopped at some point and then stabilized or reversed.

Second, the model proposed in this study explained only partly variations in the given criteria. Thus, it is apparent that some additional constructs (besides CA and SPCC) need to be investigated in subsequent studies. Regulatory focus theory (Higgins, 1997, 2012; Scholer & Higgins, 2010, 2011), which is one of the most consequential psychological theories pertaining to the self (Polman, 2012), could be employed to provide potentially useful candidates for consideration. This theory contends that whether people self-regulate with respect to desired end-state and are characterized by an eager approach toward fulfilling aspirations (i.e., have a chronic promotion orientation; Higgins, 1997, 2012) or whether they self-regulate with respect to undesired end-state and approach the process of goal-pursuit in a vigilant manner (i.e., have a chronic prevention orientation) affects the way they choose and pursue goals, as well as how they interpret the outcomes of successful or unsuccessful goal pursuits (Higgins, 1997, 2012; Scholer & Higgins, 2010, 2011). Applications of the regulatory focus theory to communication research hold promising opportunities, as illustrated by recent investigations (see Fransen & ter Hoeven, 2011; Hong, 2012). For the specific context of public speaking within the BCC framework, it is possible that students who have a strong promotion orientation regard delivering successive public speeches as exciting opportunities to improve their performance in the task at hand and reach their goals (e.g., be able to deliver good speeches in front of diverse audiences). On the contrary, it is possible that
students who have a strong prevention orientation perceive giving a public speech an unavoidable “chance” to fail. These marked differences in internalizing the role of learning opportunities provided by BCC can go a long way toward exploring variations in students’ change in self-efficacy beliefs and willingness to communicate during the given semester. Further research would do well to study these aspects.

Other future research studies that have the potential to be informative for instruction in the BCC could analyze the time-related evolution of students’ WTC, SPCC, and CA scores pertaining to the other communication contexts (i.e., communication in dyads, small groups, and large groups). A comparison between findings from this research, associated with the public speaking context, and findings from the other contexts could shed some light on whether the beneficial effects of being enrolled in a BCC transfer across communication contexts.

In conclusion, this research offers an in-depth analysis of the cross-sectional and longitudinal relationships among CA, SPCC, and WTC in public speaking contexts framed by the BCC. By comparing and contrasting static and dynamic linkages, this study reveals important findings that were previously unavailable. These findings are relevant for both theory development and pedagogical practice and open new avenues for productive research centered on the BCC framework.

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