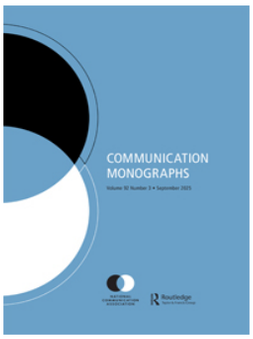

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Communication Monographs

ISSN: 0363-7751 (Print) 1479-5787 (Online) Journal homepage: www.tandfonline.com/journals/rcmm20

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To cite this article: Craig Fowler, Jessica Gasiorek & Howard Giles (13 Oct 2025): Communication accommodation theory in quantitative research: Toward a standardized operationalization of core constructs, Communication Monographs, DOI: 10.1080/03637751.2025.2546102

To link to this article: https://doi.org/10.1080/03637751.2025.2546102

Published online: 13 Oct 2025.

COMMUNICATION MONOGRAPHS
https://doi.org/10.1080/03637751.2025.2546102

Communication accommodation theory in quantitative research: Toward a standardized operationalization of core constructs

Craig Fowler [a]*, Jessica Gasiorek[b]* and Howard Giles[c]

[a]School of Humanities, Media and Creative Communication, Massey University, Auckland, New Zealand; [b]Communicology Program, School of Communication and Information, University of Hawai'i at Mānoa, Honolulu, HI, USA; [c]Department of Communication, University of California, Santa Barbara, CA, USA

ABSTRACT

Communication accommodation theory (CAT) has been an influential theory for 50 years. However, its core constructs have not been operationalized consistently in quantitative research. In this manuscript, we report on efforts to standardize and validate a multi-dimensional instrument to measure constructs of theoretical importance in CAT. In Study 1 ($n = 416$), we detail the process through which items drawn from previous research were collated and describe six factors confirmed through factor analysis of the "other-report" form of the instrument. In Study 2 ($n = 398$), we replicate the factor structure from Study 1 and demonstrate its construct validity. In Study 3 ($n = 356$), we show the instrument can also serve as a valid self-report measure.

ARTICLE HISTORY
Received 6 April 2025
Accepted 24 July 2025

KEYWORDS
Group/intergroup communication; intercultural communication; interpersonal communication; survey

For 50 years, scholars have used communication accommodation theory (CAT) to study interactional attunement in a wide range of contexts (see Soliz & Bergquist, 2016). In this time, CAT has undergone many phases of theoretical development (Giles et al., 2023; Zhang & Giles, 2018), and the range of phenomena and contexts studied by CAT researchers has expanded. This reflects positively on CAT's heuristic value, but its theoretical growth has not been accompanied by systematic development of corresponding quantitative measures. In light of this – and given suggestions that CAT studies might benefit from greater standardization in measurement (Soliz & Giles, 2014) – this paper presents the consolidation and validation of a set of survey items intended to bring greater coherence to CAT studies that rely on the use of rating scales.

Core constructs of CAT

Several reviews offer a comprehensive overview of CAT (e.g., Gallois et al., 2005; Giles et al., 2023). Space precludes offering a detailed summary of the theory's propositions.

CONTACT Craig Fowler c.fowler@massey.ac.nz School of Humanities, Media and Creative Communication, Massey University, Private Bag 102904, North Shore, Auckland 0745, New Zealand
*The first two authors contributed equally to this manuscript.

However, it is important to articulate what CAT seeks to explain and predict, which is "when, how, and why individuals engage in interactional adjustments with others, as well as recipients' inferences, attributions, and evaluations of, and responses to them" (Giles et al., 2023, p. 1). Fundamentally, then, CAT is concerned with the phenomenon of communicative adaptation, as well as the antecedents and consequences of such adaptation. In what follows, we attempt to explain what accommodation *is* and identify the core constructs that have emerged through CAT's development. Our goal is not to tread on the toes of existing theoretical reviews. Rather, it is to highlight the vast range of phenomena that fall in CAT's scope, thereby illustrating the challenges relating to measurement that this theory presents for quantitative researchers.

The term "accommodation" is not always used consistently in CAT scholarship. For example, it has been defined as interactants' efforts to "coordinate and align their communicative efforts" (Pitts & Harwood, 2015, p. 89); as the behavioral adjustments interactants make "to either diminish or enhance social and communicative differences between them" (Giles & Baker, 2008, p. 1); and as behaviors "evoking listeners' social approval, attaining communication efficiency … and maintaining positive social identities" (Giles et al., 1987, p. 15). Notably, some of these definitions suggest accommodative behavior is inherently prosocial, while others focus simply on "processes of communicative attuning" (Coupland et al., 1991, p. 26), which is at the "heart" of CAT (Gasiorek et al., 2021).

The lack of consensus regarding exactly what accommodation *is* has contributed to the lack of consistency in how accommodation has been measured. The challenge this presents to CAT scholarship has been compounded by the fact that different approaches to examining accommodation have gained prominence at different points in CAT's history (leading researchers to emphasize, and correspondingly measure, different aspects of the construct) and the tendency of researchers to use different instruments to operationalize the same, core CAT constructs. In what follows, we describe three "branches" of CAT research, each of which takes a distinct approach to operationalizing accommodation in quantitative CAT research.

The first branch: Approximation

Early CAT research explored "accent and bilingual shifts in interactions" (Giles & Ogay, 2007, p. 294), as well as antecedents and consequences of such adjustments (Giles et al., 1991). Researchers using this "approximation" approach typically examined objective markers of similarity and difference in interlocutors' communication. In the first study invoking speech accommodation by name (Giles et al., 1973), for example, the central focus was on how (and with what effect) French-Canadians were perceived to approximate – that is, *converge* to – English-Canadian listeners' language practices, and corresponding effects.

In CAT-speak, *convergence* occurs when speakers reduce the actual or imagined differences between their speech and that of an interactional partner (Giles et al., 1987). Convergence has been studied with respect to many communicative characteristics, including accent, speech rate, utterance length, pause frequency, gaze, and degree of self-disclosure

(Dragojevic et al., 2016; Giles et al., 1991). Whereas convergence typically represents interactants' efforts to attenuate differences between their actual or perceived communicative behavior, *divergence* represents efforts to accentuate such differences (Coupland et al., 1988). A third strategy – *maintenance* – occurs when a person sustains their "default" communication behavior along one or more dimensions without adapting it for their fellow interlocutor (Dragojevic et al., 2016), thereby expressing a degree of psycholinguistic distinctiveness.

Thakerar et al. (1982) formalized distinctions between (i) *psychological* and *linguistic accommodation*, and, relatedly, between (ii) *subjective* and *objective accommodation*. These contrasts highlight that cognitive and behavioral aspects of accommodation are not always aligned. A parent may, for instance, speak softly to soothe and show caring for a screaming child (thereby demonstrating a psychologically convergent orientation) while diverging from their child behaviorally (in this case, hoping to prompt the child to eventually converge with them). In distinguishing subjective and objective accommodation, Thakerar et al. (1982) make explicit that "what is perceived to be occurring in an interaction is of more importance often than what actually occurs" (Shepard et al., 2001, p. 41) for predicting interlocutors' responses.

The second branch: Other accommodative strategies

In the late 1980s, convergence and divergence with respect to various dimensions of communication – that is, *approximation* – came to be "conceived of as but a *couple* of the many ways in which people accommodate or not" (p. 5). Specifically, Coupland et al. (1988) argued that, as well as using approximation strategies, people employ (at least) three other accommodative strategies as they adjust their communication.

First, speakers may use *interpretability strategies* to manage a listener's comprehension. If a speaker wishes to help a listener understand what they are saying, they may, for instance, adapt to the listener's "receptive competence" by speaking more slowly, emphasizing key words, or shifting to a more basic vocabulary (e.g., Coupland et al., 1988; Gallois et al., 2005; Giles et al., 1991). Second, speakers may enact *discourse management strategies*, via which they attend to a listener's conversational needs or desires. Adaptations relating to *field* entail adjusting the content of talk so that what is talked *about* is likely to be relevant and of interest to a fellow interactant, whereas adjustments relating to *tenor* concern the management of interpersonal elements of the interaction (Coupland et al., 1991), including engaging in linguistic politeness (Shepard et al., 2001), honoring identity (Soliz et al., 2009), or addressing a fellow interactant's emotional needs (Giles et al., 1991). Finally, when a speaker attends to *mode* in discourse management, they make choices regarding how interaction is structured and organized (Coupland et al., 1991; Williams & Nussbaum, 2001). Third, speakers may use *interpersonal control strategies* to manage role relations and the distribution of power between interactants (Coupland et al., 1988). At a micro level, these strategies involve things like word choice and turn-taking (Shepard et al., 2001). At a more macro level, they may hinder or facilitate a fellow interlocutor's attempts to be autonomous, assert agency, take initiative, claim

rights, and set or pursue an agenda (Coupland et al., 1991; Dragojevic et al., 2016; Williams & Nussbaum, 2001).

Empirically, use or perceived use of these four core strategies can be examined with respect to either others or oneself. For instance, a study of accommodation in aged-care settings could examine how an older adult's self-reported well-being is predicted by that same older adult's other-reports concerning a carer's use of interpretability, discourse management, and interpersonal control strategies, or by the carer's self-reported use of these strategies.

We consider approximation, interpretability, discourse management, and interpersonal control to be primary accommodative strategies because they are delineated consistently in theoretical reviews. Two other strategies (namely, emotional expression and face management)[1] have also been identified. However, we do not consider these to be core strategies because (i) they partially overlap with elements of the four core constructs – particularly discourse management,[2] and (ii) they have received more limited theoretical attention and been studied in a fairly narrow range of contexts (e.g., health communication, in the case of emotional expression; Giles et al., 2023).

As accommodative strategies are conceptualized in terms of speakers' intentions or goals (regardless of whether a speaker is conscious of said intentions or goals), a given observable behavior could correspond to more than just one strategy; Gallois et al. (2005) stressed that "while there is some association between strategies and behavior, there is no necessary connection between them" (p. 140). For instance, an interactant's decision to focus conversation on a particular topic could reflect accommodative strategies of interpretability (if driven by the desire to keep conversation within the listener's sphere of comprehension), discourse management (if intended to render the conversation interesting for the listener), or interpersonal control (if meant to prevent the other person pursuing an alternative topic of talk). This "loose" connection between behavior and strategies has meant that for communicative behavior to be labeled as a manifestation of a particular accommodative strategy, *somebody* – a speaker, a recipient, recipient group, audience, or a researcher – must both perceive that some kind of communicative attunement is occurring and draw an inference about *why* it is occurring.

The third branch: Appraisals and consequences of (non)accommodation

The final branch of CAT focuses on how people evaluate communicative behavior as meeting (or failing to meet) standards for appropriateness or desirability. CAT scholars taking this approach contrast accommodation with *nonaccommodation*, defined as communication that at least one interlocutor deems to be inappropriately attuned. The most oft-studied forms of nonaccommodation are *over-* and *underaccommodation*, and these phenomena moved from the periphery (e.g., Giles & Smith, 1979) to a more central position in CAT research as scholars drew on CAT to study intergenerational interactions. *Overaccommodation* "goes beyond," or "overshoots," what is deemed appropriate (Gasiorek & Giles, 2012), whereas *underaccommodation* occurs "when some style or quality of talk is underplayed (relative to needs or wishes)" of one or more interactants (Coupland et al., 1991, p. 30).

In intergenerational interactions, overaccommodation is often framed as a "young-to-old" behavior that can take multiple forms. Young people may use *overly nurturing*

speech or *babytalk* that features overly familiar terms of address, simplistic vocabulary and grammar, and highly varied intonation. They may also use *overly-directive speech*, which seeks to exert control over older adults through the use of "imperatives, shortness, cold and uncaring tones, and disparaging remarks" (Williams & Nussbaum, 2001, p. 111). Underaccommodation, however, is more often described as an "old-to-young" behavior that occurs when older adults pay an undesirable amount of attention to the younger interactant, engage in painful self-disclosures, or communicate in ways that are authoritarian or dismissive (Williams & Giles, 1996).

Although some behaviors have come to be "routinely associated" (Giles & Gasiorek, 2011, p. 236) with over- and underaccommodation, no communicative behavior is *inherently* overaccommodative or underaccommodative. Rather, the determination of whether a speaker has behaved over- or under-accommodatively rests on the "appraisals, assessments or … attributions" of recipients (Gasiorek & Giles, 2012, p. 311). Accordingly, CAT research in this branch often addresses the perceptions and consequences of communication deemed (non)accommodative (Gasiorek, 2013). By necessity, researchers in this tradition draw heavily on self-report methodologies, albeit often in conjunction with observational and experimental approaches.

Measurement of CAT constructs

To a degree, the different conceptualizations and operationalizations of accommodation outlined in the three branches above reflect researchers appropriately recognizing the need to tailor conceptualizations and operationalizations of accommodation to the context(s) in and methods by which they will be studied. Nonetheless, inconsistencies in how accommodation is assessed pose challenges for CAT researchers (Soliz & Bergquist, 2016). From an empirical perspective, variations in how accommodation is measured may influence the effect sizes researchers detect (Soliz & Giles, 2014) and can make it difficult to draw comparisons across studies. From a theoretical perspective, the implications are more fundamental. As Soliz and Giles (2014) argue, inconsistency in how accommodative behavior is construed and measured risks "obfuscat[ing] the tenets of theory" (pp. 127-128) to a point where readers of CAT research may be left unsure of what accommodation actually *is*.

To illustrate how operationalizations of accommodation vary, consider the approaches taken by Bilous and Krauss (1988) and Harwood (2000). In Bilous and Krauss (1988) study, *accommodation* is represented by the degree to which (as a function of a conversational partner's sex) a speaker changes the number of words they speak, and how often they interrupt, pause, make "back-channel responses," or laugh. In Harwood's (2000) study, however, *accommodation* is indexed via grandchildren's perceptions of whether a grandparent has been "respectful," "complimentary," "affectionate," "attentive," "supportive," and "shared personal thoughts and feelings." While acknowledging that researchers are addressing different contexts of interaction (and also that Bilous and Krauss' study focuses on objective behaviors whereas Harwood's emphasizes subjective perceptions), researchers new to CAT might reasonably question the degree to which these two operationalizations are truly capturing the same underlying construct.

Given these issues, Soliz and Giles (2014) suggested CAT research might benefit from "more standardization where possible," but noted this does not mean adopting a "*one-*

size-fits-all measure in all cases" (pp. 128–129). Providing a set of flexible, standardized, self- and other-report measures for quantitative CAT research is the goal of the following studies. In arguing for the need to re-operationalize CAT constructs, our intent is not to be dismissive of prior work. Rather, we hope to offer researchers a standardized but flexible, conceptually-focused set of core items for quantitative social scientific researchers that can be applied across diverse interactional settings, and supplemented by context-specific items when appropriate.

In developing a revised and standardized suite of tools for measuring CAT constructs, we hope to do justice to CAT's theoretical richness by offering ways to tap a broad range of accommodative phenomena. To be able to address all three branches of CAT empirical work, a collection of measures must be able to tap: (a) processes of attunement, (b) what people *do* and are *seen to do*, (c) what people *claim* to be trying to achieve or *perceive* others as trying to achieve, and (d) how behaviors are *appraised* and interpreted. We do not propose that these elements should (or even can) all be examined simultaneously, but simply that a standardized CAT instrument should be *capable* of tapping each of these distinct facets of accommodation.

Study 1: Method

Instrument development and item selection

One of the authors compiled the measures from all available studies included in the meta-analyses conducted by Soliz and Giles (2014) and Soliz and Bergquist (2016). Although most of these studies used Likert or Likert-type scale items, some used or proposed coding schemes for accommodative phenomena (e.g., Jones et al., 1999), and others presented quotations from participants that went on to serve as the foundation of widely used measures of accommodation (e.g., Williams & Giles, 1996). Where Likert-type items were not used, the same author modified the phrasing of codebook instructions and quotations to fit a Likert or Likert-type format. This produced an initial corpus of approximately 500 items (excluding exact duplicates).

The first two authors then reviewed the item pool and removed items that were very similar to others (e.g., wording was almost identical but referenced different contexts or targets) or lacked face validity. The remaining items were reviewed and retained only if they were judged to meet one of the *a priori* criteria stated above, that is, they appeared to measure (a) processes of attunement; (b) how a person behaves or is seen as behaving; (c) the actual or presumed goals and motives underlying communicative behavior; or (d) appraisals of behavior.

Next, in an iterative process, these authors clustered items together around whether they described (a) observable behavioral modifications, (b) the apparent use of approximation, interpretability, discourse management, or control, (c) the adoption of an accommodation-related intention on the part of a speaker (e.g., seeking to modify social distance or demonstrate affiliation), or (d) the appraisal of behavior as (non)accommodative, as these were constructs identified in our review of the theoretical communication accommodation literature. Following this process, we reviewed and adjusted the phrasing of items so that they: (a) had a similar style and tone, (b)

sounded reasonably contemporary in terms of wording, (c) were applicable across a range of interactional contexts (rather than, say, being only suitable for a physician, stepparent, police officer, etc.), and (d) could be adapted to serve as either a self- or other-report.

At this stage, the remaining items represented 10 theoretically grounded categories: (1) convergence/approximation, (2) interpretability, (3) field, (4) tenor/role relations, (5) mode, (6) interpersonal control, (7) appraisal of attunement, (8) appraisal of nonaccommodation, (9) management of social/psychological distance, and (10) appraisal of psychological accommodation (in terms of motives/intentions). From the literature, we prepared conceptual definitions of each category ((Supplementary Table 1)); if our definition was not fully tapped by existing items, we created new ones (3 across all categories). At the end of this process, we had 90 items (see (Supplementary appendix)), distributed fairly evenly across categories. Of these, 86 used a 7-point Likert scale (1 = Strongly disagree; 7 = Strongly disagree).

Participants and procedures

We conducted an online study ($N = 416$) to test the factor structure of the items. MTurk workers residing in the United States (and holding an approval rate of $\geq$ 99%) were recruited via *CloudResearch* to take advantage of features offered by this platform that enhance data quality. Specifically, we blocked suspicious geocode locations and duplicate IP addresses, and limited availability of the study to people who had passed CloudResearch's data quality screening tests and belonged to their *approved group*; in practice, this means that respondents had established a track record with CloudResearch of providing appropriate responses to items intended to check attentiveness, and of providing consistent answers to demographic questions (thereby demonstrating that they did not "adopt" imposter identities to qualify for studies with inclusion criteria). Previous research conducted on the grounds that relying on MTurk reputation alone to guarantee data quality is insufficient has demonstrated that participants from CloudResearch's approved group are significantly more attentive to questions and provide data that yields higher reliability coefficients and better replicates classic experimental effects (Hauser et al., 2023). The median completion time for the study was 17 minutes, and participants were paid $3.75 (USD).

Of our respondents, 55.3% were male, 44.0% were female, and 0.7% were gender diverse. Their mean age was 40.19 years ($SD = 12.44$ years), and 78.8% self-identified as White, 11.3% as Black or African American, 7.2% as Asian/Asian-American, 7.0% as Latino/Hispanic, 1.0% as Native Hawaiian or Pacific Islander, 0.5% as American Indian or Alaska Native, 0.2% as Middle-Eastern, and 0.5% as another ethnicity. Details regarding participants' employment status and education level for all studies are available in Supplementary Tables 2 and 3.

As it is important that measures of CAT constructs are robust to context, we constructed our survey so that participants would report on a range of distinct relational settings. After providing informed consent, participants first answered three background questions, indicating if they were (i) currently a student (or had been in the past 12 months), (ii) currently (or within the last 12 months had) had a healthcare provider with whom they communicated regularly, and (iii) currently (or in the last 12 months

had been) employed in a job involving regular communication with a supervisor. These background questions were used to help direct participants to one of five variations of the questionnaire. In these versions, participants were asked to reflect on their general communication experiences (rather than addressing a specific conversation) with a specific instructor, healthcare professional, supervisor, friend, or older family member of their choosing. Other than referencing a different category of communicative target, the wording of the survey questions was identical in each variation. These different contexts were included for the purposes of generalizability only (not theoretical interest); as such, data were combined across contexts in all analyses.

To make questions more concrete, participants wrote the name or initials of the person about whom they were thinking (in the case of the older family member condition, they also noted the relationship between that person and themselves). This text was piped into individual questions. The 90 CAT items to be tested were presented in blocks comprising (typically) 8–10 items representing multiple constructs (i.e., all items relating to a particular construct were not grouped together); blocks were in the same, fixed order for all participants. After answering the CAT questions, respondents provided demographic information.

Results and discussion

Data analysis

Each proposed subscale (convergence/approximation, interpretability, field, tenor/role relations, mode, interpersonal control, appraisal of attunement, appraisal of nonaccommodation, management of social/psychological distance, and appraisal of motives/intentions; see Supplementary Table 1) was associated with a known and explicitly theorized construct in CAT. We therefore conducted confirmatory factor analyses (CFA), as recommended when researchers have an "a priori sense, based on past evidence and theory, of the number of factors that exist in the data, of which indicators are related to which factors, and so forth" (Brown, 2015, p. 1).

We conducted two separate CFAs: (a) one with items measuring the concrete enactment of specific accommodative strategies (corresponding to the first and second branches of CAT research) and (b) one for items measuring perceptions or appraisals of behavior (corresponding to the third branch of CAT research). Separate CFAs (rather than a single CFA with all items) were conducted for two reasons. First, because the first and second branches focus on speakers' strategies and behaviors, and the third branch focuses on recipients' perceptions and appraisals of behaviors (e.g., perceived motivations; evaluations as appropriate or inappropriate), there was considerable potential for cross-loading between these two sets of factors. That is, a given behavior described in an item from a first or second branch factor (e.g., "tried to boss me around", a *control* item) could be perceived and appraised in a way that corresponded to a factor from the third branch (e.g., *appraisal of nonaccommodation*). As these constructs are theoretically distinct in the CAT literature, we wanted to be able to identify distinct measures for them. Second (and relatedly), because the different branches of CAT represent different conceptual approaches to studying accommodation, a given empirical research study typically targets empirical

measurement of either speaker behavior or recipient perceptions. Thus, developing sets of measures for these foci separately is generally consistent with how researchers would ultimately use those measures.

Thus, the first CFA comprised items ostensibly measuring approximation, interpretability, field, tenor, mode, and control. Items relating to approximation (corresponding to the first theoretical branch, addressing similarity and difference in objectively measurable behavior) were included with the strategies items because approximation is typically identified as a strategy in theoretical reviews (Coupland et al., 1991; Dragojevic et al., 2016). The second CFA included items relating to appraisals of attunement/accommodation, appraisals of nonaccommodation, management of social distance, and appraisals of motives/intentions.

Each CFA was run in Mplus 8.5 (Muthén & Muthén, 1998–2020), using maximum likelihood estimation. Multiple iterations of each model were run. Between iterations, items with high cross-loadings (indicated by high modification indices suggesting an item be specified as an indicator of another factor) and low primary factor loadings (< .40) were dropped, and highly correlated factors ($r > .95$) were collapsed. Specifically, in the strategies model, *tenor*, *field*, and *mode* were ultimately combined into a single discourse management factor,[3] which is consistent with how these aspects of accommodation were originally theorized (Coupland et al., 1991). Likewise, in the appraisals model, *motive* and *managing social distance* were combined with *accommodation/attuning*, yielding a two-factor (i.e., accommodation and nonaccommodation) model. Again, this empirical result aligns with theoretical CAT work. Finally, when modification indices (> 30) suggested model fit could be improved by correlating error terms for items within a factor, this was allowed. However, error terms were not correlated across factors.

The *strategies* model ultimately retained 34 items across four factors (approximation, interpretability, discourse management, and control; Table 1). The *appraisals* model retained 28 items across two factors (accommodation and nonaccommodation; Table 2). McDonald's ω exceeded .90 for all subscales with three or more items; for the two-item approximation subscale, Spearman-Brown coefficient = .75 (see Supplementary Table 4 for full reliability information).

Fit indices for the final models are presented in Table 3 and correlations between factors in Table 4. Fit was better with correlated error terms than without. Both models met the criterion proposed by Hu and Bentler (1999) with respect to the SRMR (i.e., that it be lower than .08). The RMSEA values were also (when error terms were correlated) close to the value of .06 that Hu and Bentler suggest is indicative of good fit, and even *without* correlated error terms, they were well below Browne and Cudeck's (1993) value of .10 as a cutoff for poor fit. However, CFI values were somewhat lower than Hu and Bentler's (1999) suggested lower cutoff of .95. However, recent scholarship on fit in latent variable modeling suggests it is more appropriate to consider fit to be "a matter of degree" (Marcoulides & Yuan, 2017, p. 148) rather than a binary judgment of good vs. poor fit. Moreover, models with fewer indicators per factor tend to exhibit better fit than do models with more indicators per factor[4] (Schermelleh-Engel et al., 2003), indicating a tension between constructing multi-item scales that are compact enough to make good model fit feasible, while including enough items to ensure that coverage of a construct is sufficient

Table 1. Confirmatory factor analysis for strategies: Final model items and standardized loadings for Studies 1–3.

	Study 1	Study 2	Study 3
Approximation			
Tried to match my style of communication	0.92	0.86	0.67
Adopted similar ways of speaking to myself	0.66	0.83	0.64
Discourse Management			
Spoke in a respectful manner	0.88	0.85	0.72
Showed respect for my views when our opinions differed	0.87	0.87	0.76
Showed that they took my views and opinions into account	0.87	0.83	0.71
Balanced talking and listening so they didn't dominate the conversation	0.86	0.82	0.65
Were flexible about how our conversations unfolded	0.85	0.84	0.71
Gave me the chance to assert my own views	0.83	0.83	0.78
Allowed me to ask questions	0.82	0.83	0.73
Respected boundaries in the topics we talked about	0.81	0.81	0.65
Were careful not to embarrass me	0.77	0.58	0.59
Let me guide what we talked about	0.71	0.60	0.43
Talked about topics they thought I would enjoy or find interesting	0.71	0.73	0.69
This person and I disclosed at similar levels to one another so the conversation felt balanced	0.69	0.74	0.61
Discussed socially appropriate topics	0.65	0.59	0.56
Talked (as far as possible) about topics of mutual interest	0.62	0.66	0.49
Were sensitive in what they talked about	0.57	0.41	0.40
Avoided prying	0.51	0.40	0.37
Control			
Tried to boss me around	0.93	0.89	0.81
Were dismissive of what I was saying	0.90	0.86	0.81
Acted like a dictator	0.88	0.81	0.76
Were domineering	0.87	0.68	0.55
Didn't let me finish my thoughts	0.85	0.86	0.72
Interrupted me a lot	0.80	0.78	0.68
Didn't show enough respect for my privacy	0.73	0.73	0.81
Made it clear that they were in charge of conversations	0.71	0.69	0.73
Controlled the conversation	0.70	0.68	0.62
Took conversations round in circles	0.61	0.73	0.66
Interpretability			
Paced their explanations so they would be easy to follow	0.87	0.86	0.73
Took special care to express themselves clearly	0.81	0.72	0.72
Explained things in a way that they thought would make sense	0.79	0.75	0.72
Checked to make sure I understood what they were saying	0.79	0.64	0.63
Encouraged me to ask questions to make sure I understood what they were saying	0.74	0.57	0.47
Made sure I could hear them properly	0.63	0.43	0.59

Note: The full wording of items can be found here.

to ensure validity. Examining fit indices collectively, model fit was determined to be adequate.

In sum, the results from Study 1 indicated the presence of six distinguishable factors. Four of these reflected specific accommodative strategies (approximation, discourse management, control, and interpretability), and two indicated the perception that another speaker had been accommodative or nonaccommodative. As the analyses used data generated by participants reflecting on conversations in five different interactional settings, the items appear to be reasonably robust to contextual variations. We next sought to (a) verify that the factor structure was replicable, (b) establish whether it was robust to different degrees of interaction specificity (i.e., reflecting on a specific interaction with a given target rather than reflecting on general experiences across multiple interactions with a target), and (c) assess the validity of these factors by seeing how they correlate with other theoretically relevant variables.

Table 2. Confirmatory factor analysis for appraisals of accommodation: Final model items and standardized Loadings for Studies 1–3.

	Study 1	Study 2	Study 3
Accommodation/Attuning			
Were considerate	0.89	0.90	0.73
Made me feel like we were on the same wavelength	0.89	0.85	0.71
Took into account my views, needs, or perspectives	0.88	0.86	0.75
Tried to be helpful	0.86	0.83	0.72
Had good intentions	0.85	0.76	0.69
Made a real effort to bridge the gap/differences between us	0.80	0.75	0.54
Tried to meet my conversational needs	0.79	0.82	0.66
Showed me they were trying to express themselves appropriately	0.78	0.78	0.55
Adjusted their communication appropriately during our conversations	0.78	0.83	0.60
The way this person spoke created a … (sense of distance or closeness)	0.75	0.82	0.60
Took my personal characteristics (e.g., race, age, disability) into consideration in a way that was helpful	0.74	0.60	0.50
Made me feel like any differences between us didn't matter	0.73	0.79	0.54
Gave advice they knew I needed or would appreciate	0.73	0.63	0.49
Spoke at a speed that was appropriate	0.68	0.62	0.70
Tried to fix things if communication broke down	0.67	0.47	0.29
Nonaccommodation			
Were condescending	0.91	0.90	0.78
Communicated in a way I found offensive	0.90	0.89	0.79
Made me feel like my opinions didn't count	0.87	0.85	0.80
Acted like my feelings weren't valid	0.84	0.81	0.73
Spoke to me like I needed handling with kid gloves	0.80	0.65	0.63
Weren't as sensitive as they should have been in how they communicated	0.76	0.75	0.55
In hindsight, this person talked to me using patronizing terms of address or language	0.75	0.77	0.53
Told me things they shouldn't have or that I'd have preferred they didn't	0.73	0.71	0.83
Talked about things without considering that those things might be painful or uncomfortable to listen to	0.69	0.58	0.60
Exaggerated their intonation inappropriately	0.69	0.58	0.61
Talked in too much detail about things that should be private	0.67	0.54	0.67
Disclosed too much personal information to me	0.63	0.54	0.68
The way this person spoke emphasized our differences	0.60	0.65	0.48

Note: The full wording of items can be found here.

Table 3. Model fit statistics with and without correlated error terms for Studies 1–3.

	Chi-square	*p*	RMSEA	90% CI	CFI	SRMR
Study 1 – Strategies	$\chi^2(521) = 1771.38$	<.001	0.076	[.072, .080]	0.90	0.05
	$\chi^2(516) = 1505.55$	<.001	0.068	[.064, .072]	0.92	0.04
Study 1 – Appraisals	$\chi^2(349) = 1536.89$	<.001	0.090	[.086, .095]	0.89	0.05
	$\chi^2(342) = 980.20$	<.001	0.067	[.062, .072]	0.93	0.04
Study 2 – Strategies	$\chi^2(521) = 1647.30$	<.001	0.074	[.070, .078]	0.89	0.05
	$\chi^2(517) = 1477.96$	<.001	0.068	[.064, .072]	0.91	0.04
Study 2 – Appraisals	$\chi^2(349) = 1399.03$	<.001	0.087	[.082, .092]	0.88	0.06
	$\chi^2(341) = 969.79$	<.001	0.068	[.063, .073]	0.93	0.05
Study 3 – Strategies	$\chi^2(521) = 1215.00$	<.001	0.061	[.057, .066]	0.88	0.06
	$\chi^2(520) = 1178.98$	<.001	0.060	[.055, .064]	0.89	0.06
Study 3 – Appraisals	$\chi^2(349) = 1058.84$	<.001	0.076	[.070, .081]	0.85	0.08
	$\chi^2(346) = 913.15$	<.001	0.068	[.063, .073]	0.88	0.08

Note: For each model, first line is fit statistics for the model with no correlated error terms; second line is fit statistics with correlated error terms that (a) had a corresponding modification index >30 in the no-error-terms model and (b) were within the same factor.

Study 2

In Study 2, we examined the reproducibility of the factors identified in Study 1 and sought to test whether the proposed measure would produce similar results when

Table 4. Factor correlations for Studies 1–3.

	Study 1	Study 2	Study 3	Short form (Study 2)	Short form (Study 3)
Approximation – Discourse Management	0.69	0.82	0.66	0.80	0.63
Approximation – Control	−0.53	−0.63	−0.21	−0.63	−0.24
Approximation – Interpretability	0.70	0.79	0.75	0.79	0.75
Discourse Management – Control	−0.86	−0.86	−0.55	−0.88	−0.60
Discourse Management – Interpretability	0.91	0.93	0.95	0.93	0.95
Control – Interpretability	−0.73	−0.72	−0.43	−0.74	−0.46
Accom – Nonaccom	−0.84	−0.79	−0.45	−0.80	−0.48

participants focused on recalling a single conversation rather than a person's general communicative tendencies, as CAT researchers have conducted studies addressing both these foci. A second major aim of Study 2 was to evaluate the construct validity of the factors from Study 1 by testing the direction and degree of association of the six new scales with eight existing measures.

We selected these existing measures on the basis of Soliz and Giles (2014) meta-analysis (Table 4). In this analysis, Soliz and Giles compared the effect sizes of accommodation and nonaccommodation when used as predictors of several types of outcome variables. In general, the strongest effect sizes of accommodative and nonaccommodative behavior were found for criterion variables that reflected assessments of credibility, evaluations of individuals, judgments regarding the quality of contact with an interlocutor, and reports of relational solidarity.

The three core elements of *credibility* are competence, character, and goodwill (McCroskey & Teven, 1999). Competence encompasses the belief that a person is capable, intelligent, and skilled (Cuddy et al., 2008). Although there is some variation in what might constitute "character," McCroskey and Teven suggest that a person who demonstrates character in the context of credibility is trustworthy and honest. The third component of credibility, goodwill, concerns the extent to which a given individual is thought to hold positive intent toward general or specific others (McCroskey & Teven, 1999). In this study, we focus on the first and third components since they both have well-established measures.

Given that convergence (as a form of approximation) is taken to be an effortful adaptation to benefit a listener (Giles et al., 1973), it should be positively associated with goodwill; we expect the same for discourse management and perceived accommodation, as both involve tailoring communication so that it is sensitive to a listener's needs. As it takes skill to converge and direct conversations in socially appropriate ways, and to make messages comprehensible to an audience, we also expect approximation, discourse management, and interpretability to be associated with competence. Conversely, nonaccommodative communication – as well as control, to the extent that it is seen as unwelcome – should elicit more negative assessments (Gasiorek & Giles, 2012), and we suspected these would extend both to judgments of goodwill and competence. We therefore hypothesized that:

H1a: Goodwill will be positively associated with approximation, discourse management, and accommodation, but inversely associated with control and nonaccommodation.

H1b: Competence will be positively associated with accommodation, approximation, discourse management, and interpretability.

The second category of criterion variables we examined in relation to measures of accommodation encompasses *evaluations of individuals* beyond those relating to credibility (Soliz & Giles, 2014). Examples of such evaluative variables that should vary in predictable ways as a function of accommodative behavior are communicative responsiveness (Stiff et al., 1988) and dominance (Graham, 1994, see pp. 140–141). Communicative responsiveness reflects the ability to help others by behaving appropriately and displaying empathy (Stiff et al., 1988). As such, it should be associated with aspects of accommodation that reflect concern for face, tone, and sensitivity to needs (e.g., discourse management). Dominance, on the other hand, reflects the degree to which a person tends to "take charge in social situations" (Graham, 1994, p. 134). As such, it is likely to be related to aspects of accommodation that emphasize taking control over communicative encounters. We predicted:

H2a: Communicative responsiveness will be positively associated with discourse management and accommodation, and inversely associated with nonaccommodation.

H2b: Dominance will be positively associated with control and nonaccommodation, and inversely associated with discourse management and accommodation.

Soliz and Giles (2014) meta-analysis also indicates accommodative behavior predicts judgments regarding the quality of contact, such as communication satisfaction. This finding is consistent with Hecht's (1978) theorizing that communication satisfaction reflects "the input attributes and process variables of … communication behaviors" (p. 253), and his contention that communication satisfaction should vary both as a function of similarities and dissimilarities between interlocutors and their behavior, and on the basis of assessments of the competence and skillfulness of an individual's communication behavior. Given this, we expected:

H3: Communication satisfaction will be positively associated with approximation, discourse management, interpretability, and accommodation, and inversely associated with control and nonaccommodation.

Finally, Soliz and Giles (2014) found that indicators of relational solidarity (e.g., liking and relational satisfaction) are associated with accommodation. According to Veksler and Eden (2017), interpersonal liking can best be understood as reflecting a "positive attitude towards potential future interaction with a particular other based on a positive cognitive evaluation of that individual" (p. 645). Relational satisfaction captures the extent to which a person evaluates a particular relationship positively (Fülöp et al., 2022; Hendrick, 1988). We therefore predicted:

H4: Participants' liking of and relational satisfaction with the target will be positively associated with approximation, discourse management, interpretability, and accommodation, and inversely associated with control and nonaccommodation.

Method

Participants and procedures

Using *CloudResearch*, we collected data from $N = 398$ MTurk workers who resided within the U. S., had a minimum approval rate of 99%, and had not participated in

Study 1. We paid participants $3.50 (USD), and the median completion time was 15.2 minutes. Of our respondents, 51.0% were male, 46.7% were female, and 2.3% were gender diverse. Their mean age was 41.21 years ($SD = 12.14$ years), and 73.1% self-identified as White, 14.6% as Black or African American, 10.1% as Asian/Asian-American, 8.5% as Latino/Hispanic, 1.3% as American Indian or Alaska Native, 1.0% as Middle Eastern, and 0.3% as another ethnicity.

We asked participants to think about a recent conversation they had experienced that was at least a few minutes long. Participants were told that the conversation could involve just them and one other individual, or that it could have involved several people. However, they were informed that if they chose to think about a conversation involving multiple persons, they should focus their responses on the communication behavior of one specific person (other than themselves) who took part in that conversation. To personalize the questions asked and remind participants that they were being asked about the communication behavior of a specific individual (the "target"), we again asked respondents to enter the first name or initials of the person they were thinking of. This information was piped into the text of subsequent questions. After providing contextual information regarding the conversation they were thinking about, respondents completed the CAT items and measures used to assess our scale's construct validity.

Measures

Communication accommodation

Respondents completed the 62 CAT items retained from Study 1. All but one item (which assessed the extent to which their partner's communication created a sense of distance vs. a sense of closeness) was presented on a Likert scale (1 = Strongly disagree; 7 = Strongly agree).

Goodwill

Six items adapted from McCroskey and Teven (1999) measured goodwill (e.g., *Person X has my interests at heart*). As with all scales measuring criterion variables, items were averaged to form a composite, $\omega = .90$.

Competence

Participants rated their level of agreement that the person about whom they were completing the survey was *capable, skillful, intelligent,* and *confident* ($\omega = .87$; Cuddy et al., 2008).

Communicative responsiveness

We modified the wording of Stiff et al.'s (1988) 5-item scale ($\omega = .92$) to reflect that the instrument was being used to obtain an other- rather than self-report (e.g., *Person X usually has a knack for saying the right thing to make people feel better when they are upset*).

Dominance

Four items from the dominance subscale of Norton's communicator style measure (Graham, 1994) were adapted to reflect that participants were reporting on another

person's behavior rather than their own (e.g., *Person X is dominant in social situations, Person X tries to take charge of things when they are with people*). The scale was reliable, $\omega = .84$.

Communication satisfaction

Sharabi's (2021) 5-item short form of Hecht's (1978) communication satisfaction scale ($\omega = .95$) was adapted so that each item referenced the specific conversation with their chosen target that participants were reporting on (e.g., *The conversation I had with Person X flowed smoothly*).

Liking

Veksler and Eden's (2017) 6-item scale indexed the degree to which participants liked the individual about whom they were completing the survey. A sample item from this scale is *There are aspects of Person X's personality that I admire*. The scale was reliable, $\omega = .93$.

Relational satisfaction

We used the single item, *In general, how satisfied are you with your relationship with Person X* to measure relational satisfaction. Responses to this question (drawn from 1988], p. 7-item relational satisfaction measure) have been found to correlate very highly ($r = .86$) with scores on the full version of Hendrick's measure (Fulop et al., 2022), suggesting it is a valid and efficient means by which to obtain holistic assessments of a relationship.

Results and discussion

As in Study 1, the factor structure of the proposed items was tested with two CFAs using maximum likelihood estimation conducted in Mplus 8.5 (Muthén & Muthén, 1998–2020). The *strategies* model comprised 34 items across four factors (approximation, interpretability, discourse management, and control; Table 1), and the *appraisals* model comprised 28 items across two factors (accommodation and nonaccommodation; Table 2). We first ran models with no correlated error terms; we then ran a second set in which we allowed correlated error terms for items within a factor where modification indices (> 30) indicated this would be beneficial. Final model fit was acceptable; fit indices (with and without correlated error terms) are presented in Table 3. Reliability coefficients were also strong, with ω and the Spearman-Brown coefficient being at least .83 for all subscales (see Supplementary Table 4 for full reliability information).

To test H1–H4, which were intended to assess the validity of the proposed scales, we ran a series of bivariate correlations between the measures' subscales (calculated as an average of the items in the corresponding factor in the measurement model) and the scales that each hypothesis addressed. Correlations between variables are presented in Table 5.

H1a, which predicted goodwill would be positively associated with approximation, discourse management, and accommodation, but inversely associated with control and nonaccommodation, was supported. H1b, which predicted competence would be positively associated with accommodation, approximation, discourse management, and interpretability was also fully supported. H2a, which predicted communicative responsiveness would be positively associated with discourse management and accommodation,

Table 5. Correlations of composite CAT subscales with construct validity variables from Study 2 and Study 3.

	Approx	Disc Mgmt	Control	Interp	Accom	Nonaccom	Goodwill	Comp	Comm Resp	Dom	Comm Sat	Liking	Rel Sat
Approx	1	.506**	−.129*	.537**	.587**	−0.100			.359**	0.085	.362**	.438**	.268**
Discourse Mgmt	.732**	1	−.454**	.794**	.862**	−.422**			.619**	−.146**	.721**	.637**	.356**
Control	−.554**	−.782**	1	−.307**	−.350**	.913**			−.221**	.556**	−.561**	−.388**	−.207**
Interpretability	.657**	.795**	−.576**	1	.826**	−.261**			.618**	0.029	.560**	.572**	.316**
Accom	.755**	.918**	−.748**	.825**	1	−.311**			.640**	−0.042	.656**	.652**	.357**
Nonaccom	−.499**	−.742**	.897**	−.538**	−.703**	1			−.195**	.527**	−.551**	−.362**	−.234**
Goodwill	.558**	.720**	−.714**	.598**	.729**	−.655**	1						
Competence	.452**	.538**	−.404**	.518**	.571**	−.423**	.575**	1					
Comm Responsive	.536**	.672**	−.531**	.585**	.665**	−.472**	.760**	.541**	1	.132*	.471**	.495**	.255**
Dominance	−.171**	−.243**	.453**	−.115*	−.186**	.370**	−.357**	−0.024	−.168**	1	−.215**	−.107*	−0.066
Comm Satisfaction	.664**	.821**	−.784**	.653**	.829**	−.756**	.701**	.513**	.572**	−.277**	1	.630**	.466**
Liking	.553**	.672**	−.586**	.583**	.690**	−.553**	.831**	.681**	.726**	−.230**	.676**	1	.470**
Rel Satisfaction	.518**	.662**	−.606**	.553**	.683**	−.569**	.780**	.569**	.664**	−.207**	.678**	.791**	1

Note: Lower triangle shows correlations from Study 2; upper triangle shows correlations from Study 3. *$p < .05$, **$p < .01$.

and inversely associated with nonaccommodation, was also supported, as was H2b, which predicted dominance would be positively associated with control and nonaccommodation, and inversely associated with discourse management and accommodation (although these correlations were weaker than associations between CAT subscales and other constructs). H3 was also fully supported: communication satisfaction was positively associated with approximation, discourse management, interpretability, and accommodation, and inversely associated with control and nonaccommodation. Finally, H4 was fully supported: target liking and relational satisfaction positively associated with approximation, discourse management, interpretability, and accommodation, and inversely associated with control and nonaccommodation.

The aim of this study was to replicate the factor structure found in Study 1 on an independent sample, test whether this factor structure also emerged when studying specific interactions (versus general communicative tendencies), and assess the subscales' construct validity by examining their associations with variables that are often used in CAT studies. Overall, results confirmed the factor structure found in Study 1 (evident in both factor loadings and fit statistics), and supported all hypothesized relationships with respect to construct validity. This offers evidence that the scales proposed here are replicable, valid measures of their corresponding CAT constructs when participants are asked to report their perceptions and experiences of an interlocutor's behavior. However, not all CAT scholarship is interested in reports of others' behavior; some researchers also want to be able to measure participants' *own* accommodative moves.

Study 3

The aim of the third study was to determine whether these factors replicate for self-reports of participants' own communication (rather than reports of another's communication) and to assess the construct validity of a self-focused version of these scales. Due to resource limitations, we focused on only a subset of Study 2's criterion variables (communication satisfaction, dominance, communicative responsiveness, liking, and relational satisfaction). Our predictions for relationships with these constructs were the same as in Study 2 (i.e., H2-H4).

Method

Participants and procedures

Data were collected via Qualtrics Panels; the final sample comprised $N = 356$ U.S. adults. 50.3% were male, 48.0% were female, 0.8% were gender diverse, and a further 0.8% did not report their gender. The mean age of our participants was 49.26 years ($SD = 17.24$ years), and 71.1% self-identified as White, 19.1% as Latino/Hispanic, 10.4% as Black or African American, 4.2% as Asian/Asian-American, 2.8% as American Indian or Alaska Native, 0.3% as Native Hawaiian or Pacific Islander, 0.3% as Middle Eastern, and 2.5% as another ethnicity.

We followed the same procedures as Study 2 (i.e., asking participants to think about a specific recent conversation they had experienced), with the same set of procedures to personalize the questions that followed.

Measures

All communication accommodation items were reworded so that the participant reported on their own behavior rather than their interlocutor's, and any previous reference to the self now referred to the interlocutor (e.g., *Person X tried to match my style of communication* became *I tried to match Person X's style of communication*). For construct validity scales, the same measures as Study 2 were used, with the wording adjusted so participants reported on their own tendencies rather than those of a third-party target. Items in each multi-item scale were averaged to form composites: communication satisfaction, $\omega = .87$; dominance, $\omega = .77$; communicative responsiveness, $\omega = .84$; and liking, $\omega = .91$.

Results and discussion

We followed the same analytic procedures as in Study 2.[5] Loadings and reliability coefficients were slightly lower than in the previous two studies, but largely still within acceptable ranges (i.e., ω exceeded .80 for all items with 3 or more items; Spearman-Brown coefficient = .60 for the two-item approximation subscale; Supplementary Table 4).

As predicted, communicative responsiveness was positively associated with discourse management and accommodation but inversely associated with nonaccommodation (see Table 5 for a correlation matrix). Dominance was positively associated with nonaccommodation and control, and inversely associated with discourse management (per our predictions), although the correlation between dominance and accommodation was not significant. Communication satisfaction, as expected, was positively associated with approximation, discourse management, interpretability, and accommodation, and inversely associated with control and nonaccommodation. Finally, liking and relational satisfaction were positively associated with approximation, discourse management, interpretability, and accommodation, and inversely associated with control and nonaccommodation.

Overall, results confirmed the factor structure found in the previous two studies and supported all but one of the hypothesized relationships with communication satisfaction, dominance, communicative responsiveness, liking, and relational satisfaction. This offers further evidence for the validity of the proposed scales as measures of their corresponding CAT constructs, now also when participants report on their own communication behavior, perceptions, and experiences rather than someone else's.

Postscript: Measure short form

Recognizing that researchers may have concerns about administering long measures and that the measures proposed have subscales that are uneven in length, we used data from Studies 2 and 3 to create and test a short form of the measures. Item selection was guided by factor loadings (i.e., picking items that loaded highly on both the other- and self-report scale versions) and theoretical considerations (i.e., attempting to represent multiple aspects of factors with more complex conceptualizations, such as *discourse management*). The final short-form scales exhibit good model fit (Supplementary Table 5) and have a maximum of six items per factor (see Table 6 for items and loadings). These short-form scales have similar factor correlations to the full-form scales (see Table 5),

Table 6. Confirmatory factor analysis for short form: Items and standardized loadings for Studies 2–3.

	Study 2	Study 3
Approximation		
Tried to match my style of communication	0.86	0.68
Adopted similar ways of speaking to myself	0.83	0.63
Discourse Management		
Showed respect for my views when our opinions differed	0.87	0.78
Spoke in a respectful manner	0.86	0.71
Were flexible about how our conversations unfolded	0.84	0.71
Showed that they took my views and opinions into account	0.83	0.72
Gave me the chance to assert my own views	0.82	0.77
Talked about topics they thought I would enjoy or find interesting	0.72	0.68
Control		
Tried to boss me around	0.91	0.80
Were dismissive of what I was saying	0.86	0.82
Didn't let me finish my thoughts	0.85	0.74
Acted like a dictator	0.81	0.74
Interrupted me a lot	0.76	0.69
Interpretability		
Paced their explanations so they would be easy to follow	0.86	0.74
Explained things in a way that they thought would make sense	0.75	0.71
Took special care to express themselves clearly	0.71	0.72
Checked to make sure I understood what they were saying	0.64	0.64
Encouraged me to ask questions to make sure I understood what they were saying	0.57	0.47
Accommodation/Attuning		
Were considerate	0.89	0.70
Took into account my views, needs, or perspectives	0.86	0.77
Made me feel like we were on the same wavelength	0.85	0.73
Adjusted their communication appropriately during our conversations	0.83	0.57
Tried to meet my conversational needs	0.82	0.63
Tried to be helpful	0.81	0.71
Nonaccommodation		
Were condescending	0.92	0.80
Communicated in a way I found offensive	0.88	0.82
Made me feel like my opinions didn't count	0.88	0.83
Acted like my feelings weren't valid	0.80	0.69
Told me things they shouldn't have or that I'd have preferred they didn't	0.67	0.83

Note: This summarizes data from two CFAs, one for strategies items and one for appraisals items; in each analysis, only items retained for the short form were included in the CFA. The full wording of items can be found here.

and subscales exhibit good internal consistency (ω ranges from .79 to .94; see Supplementary Table 4). The short-form scales also have similar correlations with construct validity scales (see Supplementary Table 6) to the full-form scales.

General discussion and contributions

In Study 1, participants reported on another person's general communicative behavior across one of five different relational contexts, and data were combined across domains to ensure the proposed measure was robust to contextual variations. A pair of CFAs established six factors. Study 2 reproduced the same six factors for participants (in a separate sample) who reported on a *specific* interaction with another individual, as did Study 3, in which participants completed the instrument with respect to their *own* accommodative behavior. Studies 2 and 3 also established the construct validity of the instrument by showing conceptually sensible associations between the subscales and measures of constructs often used in CAT research (Soliz & Giles, 2014). Reliability coefficients for the subscales were good regardless of whether participants reported on

general or specific communicative behavior, and irrespective of whether they completed the instruments as other-reports or self-reports. Model fit and factor loadings were also acceptable.

CAT has undergone 50 years of refinement to its propositional structure, yet its theoretical evolution has not been accompanied by the systematic development of measures. This is noteworthy, because many other communication theories have, almost since their inception, been accompanied by instruments that are used consistently as researchers test, refine, and apply those theories (e.g., Affection Exchange Theory, Floyd, 2001; Relational Turbulence Theory; Solomon & Knobloch, 2004; Theory of Motivated Information Management; Afifi & Weiner, 2006). This "go-to" basis for measurement is something that CAT has lacked, which has forced researchers to take what has, at times, being a somewhat ad-hoc approach to instrumentation.

Soliz and Giles (2014) argued that this has hampered efforts to compare results across studies and suggested that CAT research would benefit from a more standardized set of instruments. The studies reported in this paper aimed to develop such measures in a way that does justice to the theory's breadth while using context-agnostic items that are flexible enough to be used in studies of diverse interactional contexts. As such, they permit more consistent operationalization of CAT constructs across interactional settings, which should make it easier to synthesize an ever-expanding body of CAT literature and determine which of CAT's propositions garner strong empirical support and which need refinement.

Relatedly, the scales reported on in this paper should make it more straightforward for researchers to measure and apply the core CAT concepts that are often articulated in theoretical reviews. This is important, for as we noted early in this paper, there sometimes seems to be a disconnect between the key ideas and phenomena discussed in CAT review articles, and the CAT-themed variables invoked in quantitative studies. Our work will, we hope, help bring the conceptual and empirical streams of CAT scholarship into greater alignment.

Limitations

One limitation of our research concerns the fact that our studies relied on data provided by MTurk and Qualtrics convenience samples, for Chmielewski and Kucker (2020) warned – based on data collected in 2018 – of significant declines in the quality of data gathered via such means. Although respondents in two of our studies were recruited from the MTurk sample pool, we used filters and tools available on *CloudResearch* that have been found to obviate these quality concerns (Litman et al., 2021). Indeed, participants who survive CloudResearch's screening have recently been found to be more attentive, engaged, and compliant than respondents recruited through Qualtrics, directly through MTurk, or from undergraduate student panels (Douglas et al. 2023; see also Hauser et al., 2023).

Despite being confident that the use of online samples did not compromise data quality (particularly given our screening of the Study 3 Qualtrics data for questionable responses), our data *do* exhibit limitations common to online samples. As was the case in Douglas et al.'s (2023) comparison of various sources of online data, our participants were predominantly White and well-educated (in the two CloudResearch samples, well

over 50% of respondents had completed an undergraduate degree, and the figure approached 40% for the Qualtrics sample). More participants in our studies were, therefore, college-educated than is the case with the wider population in the U.S., and our data is likely more informative about communication accommodation in the lives of White persons than it is for persons of color.

A second limitation is that the full-form versions of the scales are quite long, totaling 62 items; using all these items could risk participant fatigue and preclude assessing other constructs of interest. A third and related limitation is that the subscales are uneven in their length. To some extent, this reflects the number of face-valid and appropriate items that were already extant in the collective body of CAT research to date; it may also reflect that more items are needed to fully capture the breadth of some construct's conceptual definitions (such as *discourse management*, with its three sub-dimensions of *field*, *tenor* and *mode*). The short form we propose addresses these issues to some extent, but it has not been independently validated; testing the short form for self- and other-report with independent samples is an important step for future work.

A fourth limitation is that we have not included every CAT-related construct ever published in an empirical article. Readers might note the absence of, for instance, reluctant accommodation, counter-accommodation, or emotional expression (as a CAT strategy in the second branch), or recognize that although our instrument includes items that appraise nonaccommodation generally, there are no separate subscales for overaccommodation and underaccommodation. The practicalities of this project necessitated some decision-making about what constructs were sufficiently prevalent in empirical and theoretical work to warrant inclusion. This necessitated judgement calls, and these are things about which reasonable people may disagree. While we believe we have captured the most important CAT constructs, we also recognize and acknowledge that this set of measures is not fully comprehensive. In particular, researchers may, in the future, wish to develop instruments that tap recognized by less-frequently studied CAT constructs such as emotional expression or face-management as strategies. These constructs are, to some degree, represented conceptually by the discourse management subscale, but specific themes (e.g., reducing anxiety, providing reassurance, showing awareness of an interlocutor's emotional state) are not captured by the measures presented in our paper.

Finally, we recognize there are high correlations between certain subscales; in particular, *interpretability* is strongly associated with *discourse management*. As *interpretability* has a specific and clear conceptual definition that is distinct from that of discourse management (which is broader and more inclusive), we consider it appropriate to treat it as theoretically separate from other factors. Nonetheless, researchers may need to weigh whether the information garnered by including it alongside some of the other subscales is sufficiently distinct, in the context of their studies, to justify treating it as a separate subscale.

Conclusion

Soliz and Giles (2014) argued that inconsistency in how accommodative phenomena are measured detracts from the cohesiveness of the literature. This paper has detailed the development of standardized measures with the goal of providing greater consistency in how researchers assess key CAT constructs. Importantly, given the diverse range of interactional contexts to which CAT is applied, the measures were developed

with the goal of being robust (and adaptable) to contextual variations. Tests across three independent samples indicate that these measures are reliable and valid, regardless of whether they are completed as self- or other-reports, and of whether participants focus on a specific interaction with another interlocutor or on general experiences of interactions with that interlocutor. These scales will not fulfill the "wish list" of every researcher interested in communicative phenomena and have certain shortcomings. With that said, in the context of such an expansive and evolving theory, it is doubtful that any instrument would or could – and we are mindful of the adage that one should not allow the perfect to be the enemy of the good. We hope these measures will help bring greater consistency to empirical CAT research, and in so doing, facilitate the ongoing evolution of one of the discipline's grand theories of interpersonal and intergroup communication.

Notes

1. *Emotional expression* occurs when an interactant tries to meet another's emotional needs by responding to their affective state (e.g., by offering support, reassurance, or comfort (Dragojevic et al., 2016). *Face management* emphasizes the maintenance of identity, and conversational moves that seek either to honor or threaten interlocutor's positive and face needs (i.e., desires for inclusion, respect, admiration, and autonomy) (Gallois et al., 2005).
2. Discourse management was described by Giles et al. (2023) as accommodation that takes "a partner's social and conversational needs into consideration, such as … face management" (p. 6), and by Zhang and Giles as being attentive to other's "communicative needs and relative social statuses" (2018, p. 99). We see both emotional expression and face-management as being closely associated with – even fundamental to – discourse management.
3. After the first round of model results, mode and tenor ($r = -.965$) were combined into a single factor; following the next iteration, the mode/tenor factor and field ($r = .956$) were combined.
4. In light of this, it is worth noting that the CFI values for the short form of this instrument – see Postscript – are better than are those for the full-length scales.
5. Factor loadings for the *strategies* model appear in Table 1 and those for the *appraisals* model appear in Table 2. Fit statistics with and without correlated error terms appear in Table 3.

Acknowledgements

The authors gratefully recognize the feedback on portions of this manuscript provided by Christine Kunkle, Jordan Soliz, and Yan Bing Zhang.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

The study was funded by internal monies received by the first author.

Ethical approval and informed consent

Consistent with the policy of the first author's institution, this study was evaluated by peer review and deemed low-risk by the first author's institution (Ethics notification number: 4000026239). As such, it was not required to be submitted for full IRB

review. As data were collected via anonymous online surveys (where terms of service preclude asking for identifying information), respondents were told that by proceeding beyond the information page, they were consenting to take part in the study.

Data availability statement

Raw data and study materials can be obtained from the corresponding author: https://osf.io/6jhqt/?view_only=ac37ebc2b2044d8cb424f73972114122.

ORCID

Craig Fowler http://orcid.org/0000-0003-0596-563X

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