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An Analysis of the Correspondence Between Imagined Interaction Attributes and Functions

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Imagined interaction (II) theory has been productive for communication and social cognition scholarship. There is, however, a yet untested assumption within II theory that the 8 attributes are related to all 6 functions and that II functions can be compared and contrasted in terms of II attributes. In addition, there is little research exploring the multidimensional nature of functions and attributes. This article tests the internal structure of II theory by investigating the relations among functions and attributes in 2 studies. Both studies revealed complex associations between the attributes and functions of IIs and provide partial confirmatory evidence for the theory. The discussion integrates findings from these 2 studies and provides avenues for future research.

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Imagined interactions (IIs) are a type of social cognition where individuals imagine anticipated or prior communication encounters with others (Honeycutt, 2003). In general, IIs help to "focus and organize individuals' thoughts on communication" before or after an interaction, serving as a way to plan upcoming talk and/or replay previous conversations in an effort to improve effectiveness (Honeycutt, 2008, p. 77). II research began by developing, over the course of several years, a descriptive map of various functions that IIs serve (e.g., managing conflict, maintaining relationships) as well as a variety of attributes (e.g., frequency, valence) that specify variability patterns IIs can exhibit (for reviews see Honeycutt, 2003, 2008; Honeycutt, Choi, & DeBerry, 2009). Although prior work has referred to the II attributes as characteristics or features (Zagacki, Edwards, & Honeycutt, 1992), we will use "attributes" to refer to these synonyms.

To date, most of the empirical studies have been directed toward describing and explaining how IIs relate intra- to interpersonal communication by exploring a single II function or a small but related set of functions and/or a small subset of theoretically relevant attributes. For instance, when individuals use IIs to rehearse upcoming conversations they tend to use more message strategies, have faster speech

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onset latency, and engage in fewer silent pauses in an actual communicative episode (Allen & Honeycutt, 1997). The strategy of focusing on a small number of attributes and functions within a given study has provided invaluable practical guidance and has advanced theoretical knowledge about a range of concepts central to the study of communication and social cognition. These include, but are not limited to, conflict and serial arguing (Honeycutt, 2004; Wallenfelsz & Hample, 2010), message processing (Berkos et al., 2001), message production and planning (Allen & Honeycutt, 1997; Honeycutt & Gotcher, 1991), and secrecy (Richards & Sillars, in press).

At the same time II theory has been a productive concept in other theoretical work, the internal structure of the theory has remained largely untested in an important way. In particular, there is an underlying assumption within II theory that the eight attributes are related to all six functions and that II functions can be distinguished amongst each other in terms of II attributes. Statements asserting functions differ in terms of attributes—for instance, that a particular function is more or less frequent, discrepant, and specific than another function—are only valid to the extent that data exist to corroborate such relationships. To our knowledge, no such comprehensive comparative research has been conducted. This article begins to rectify this state of affairs by investigating the relations among functions and attributes in two studies.

By advancing the aforementioned critique of II theory, we do not suggest abandoning research that posits IIs as a key mechanism in larger theoretical structures; indeed, we applaud and encourage the continued use of IIs in this way. Instead, we hope that our logic helps others recognize a need for thorough empirical examinations of the functions and attributes of IIs at this juncture in II research: Systematic investigations regarding key assumptions of II theory will serve to fortify past research, as well as potentially provide guidance for future II scholarship.

Within the rationale for Study 1 we provide a review of the six functions and eight attributes that make up the internal structure of II theory. We then propose directional hypotheses for comparisons among functions with respect to attributes based on prior empirical work and the ampliative reasoning used in the discussion sections of that work. The primary purpose of Study 2 is to expand upon the findings of Study 1 and to assess the relations among functions and attributes in multidimensional space, investigating the proposition of II theory that functions can occur simultaneously and, when they do, certain attributes can be used to describe these different simultaneous uses.

Study 1: Comparing II functions on the basis of attributes

II theory rests on the assumption that intrapersonal communication, or internal talk, is the "foundation on which other types of communication rest" (Honeycutt, 2008, p. 79). The importance garnered to internal talk sparked curiosity into its fundamental features which are currently described by two distinct categories: II functions and II attributes.

Imagined interaction functions

The six functions of IIs are catharsis, compensation, conflict-management, relational maintenance, self-understanding, and rehearsal (Honeycutt, 2003, 2008, 2010a). In general, these six functions describe reasons for which individuals engage in imagined talk. Catharsis refers to utilizing IIs to release tension or uncertainty, engaging in IIs as a means of "getting things off [one's] chest" (Allen & Berkos, 2010, p. 33). Compensatory IIs are those used in place of a real interaction, when a conversational partner is "physically or emotionally unavailable" (Rosenblatt & Meyer, 1986, p. 320).

Imagined interactions can also be used to manage conflict, to relive and replay conflict episodes (Honeycutt, 2010a), which is thought to be related to rumination (Richards & Sillars, in press) and recurring thoughts about arguing (Honeycutt & Bryan, 2011; Wallfenselz & Hample, 2010). This function is often referred to as "conflict-linkage" because old interaction scripts are called up from long-term memory and conflict episodes may pick up where they last left off. The conflict is maintained in the human mind through imaging conversations using retroactive and proactive IIs (see below).

Although relational partners can use IIs for any purpose, the relational maintenance function describes how partners can keep a relationship alive by using IIs to aid relational development with close relational partners including family members, friends, and dating partners. Similarly, individuals can use IIs for self-understanding, to "understand ourselves better" (Honeycutt, 2008, p. 82); this type of II involves an examination and uncovering of core ideas, attitudes, values, or beliefs through imagined conversations. Finally, rehearsal IIs allow an individual to plan and prepare for upcoming interactions.

Imagined interaction attributes

In addition to describing how people use IIs, II theory also posits eight ways in which IIs can vary, called attributes: frequency, valence, discrepancy, self-dominance, variety proactivity, retroactivity, and specificity (Honeycutt, 2003, 2008, 2010a). We review each attribute below in the context of how each can be used to explain patterns of similarity and difference among the functions. Before we investigate these predictions, however, we observe that the eight II attributes have been understood as present and associated with all previously described functions. That is, all attributes can be used in conjunction with any of the identified functions. Thus, items which comprise latent variable attributes should be interpreted similarly regardless of the particular II function being served. We posit our first research question as an attempt to investigate the measurement invariance of II attributes as a function of their purported uses.

RQ1: Is the II attributes measurement model equivalent across all six II functions?

Answering this question in the affirmative not only will allow us to further investigate specific hypotheses relevant to the internal structure of II theory; answering it this way also will provide justification for the more common measurement technique found in the extant literature, whereby a study focuses on a small number

of theoretically relevant functions and attributes to measure IIs in comparison with theoretically related constructs (see Hample, Richards, & Na, 2012, for a recent example). Answering this question in the negative, however, would cast doubt not only on the internal structure of II theory, but also on the results from studies which assume each attribute can validly be used to describe particular functions.

The attributes of imagined interactions used for various purposes

While it would be possible to explore all possible combinations of attributes and functions (which we display in the results for the sake of being forthright and thorough), doing so would result in exploratory associations without theoretical deduction (i.e., data mining). Instead, we propose targeted hypotheses based upon existing empirical generalizations gathered over the nearly 30-year history of the II research paradigm as well as the myriad speculations encountered in the discussion sections of those manuscripts. We present these hypotheses and the rationale for their proposal in the following sections.

Frequency

Frequency describes the regularity with which individuals have IIs. Research finds that "[some] people have many IIs throughout the day, whereas others rarely have them" (Honeycutt, 2010a, p. 2). For instance, women tend to report having more frequent IIs than do men (Edwards, Honeycutt, & Zagacki, 1989). The frequency with which IIs are used has been linked to a number of functions, though it has primarily been viewed as a positive element of close relationships. Such a view is appropriate enough given an early study found that IIs primarily address relational topics and primarily include relational partners (Edwards, Honeycutt, & Zagacki, 1988). This finding has since directed research toward investigating IIs "as major wellsprings that create expectations for relationship development" (Honeycutt, 2008–2009, p. 315).

Indeed, IIs are used quite frequently to maintain relationships in conjunction with more traditional relational maintenance behaviors such as sharing tasks and joint activities (see Canary, Stafford, Hause, & Wallace, 1993). At the same time as IIs are used to keep relationships alive, however, they are used just as frequently to keep the conflict within those relationships active (Honeycutt, 1995). In addition, especially for individuals in nonmarital relationships, who presumably have less frequent actual interactions (e.g., long-distance relationships; see Honeycutt, Mapp, Nasser, & Banner, 2009), the use of compensatory IIs is quite frequent.

In contrast to these three functions (relationship maintenance, conflict, and compensation), the use of IIs for purposes of catharsis should be comparatively less frequent. Since this II function is primarily used during and/or after a traumatic experience (Honeycutt, Nasser, Banner, Mapp, & DuPont, 2008), the general infrequency of such experiences suggests that IIs about anxiety and uncertainty will also be less frequent than other uses. To date, therefore, II research suggests that when compared to catharsis, IIs should be used more frequently for relational maintenance, conflict management, and compensation purposes.

H1: The use of IIs for relational maintenance, conflict management, and compensatory purposes are reported as more frequent than for use as providing emotional catharsis.

Valence

Perhaps most relevant for the catharsis function is valence or the ''amount and diversity of emotions'' experienced in an II (Honeycutt, 2010a, p. 5). Using IIs to provide emotional catharsis, although often resulting in positive emotional improvement, is marked primarily by (a) negative thoughts and emotions surrounding past traumatic events (e.g., Honeycutt, Nasser, et al., 2008) or (b) uncertainty with respect to a potentially stressful one (e.g., Honeycutt, 1989a; Rosenblatt & Meyer, 1986). Thus, these IIs should be primarily unpleasant. In a similar manner, Conflict Linkage Theory (Honeycutt, 2004) posits that imagining conflict or recalling a past conflict often results in negative feelings and emotions, a prediction that has been supported with data (see Hample et al., 2012; Honeycutt, 2010b).

In contrast, II research with married couples finds that the sole predictor of relational happiness and satisfaction is the pleasantness of IIs (Honeycutt, 1999; Honeycutt & Wiemann, 1999) suggesting the relationship maintenance function involves primarily positively valenced IIs. In a similar manner, IIs used for compensation are likely to be positively valenced. Although it is possible that individuals compensate for a lack of negative interaction by having negatively valenced IIs, research to date suggests it is more plausible that substituting for actual interaction is marked by positive emotions. For example, Honeycutt (1989b) found that elderly residents in a retirement home who reported using the compensation function had more pleasant IIs with children who visited regularly compared with children who rarely visited. Given that IIs in general are marked by strong emotional content (Edwards et al., 1998) and that valence is thought to vary as a function of II use (Honeycutt, 2008–2009), we posit, based on the above logic, that the conflict and catharsis functions differ from the relationship maintenance and compensation functions in terms of II valence.

H2: When compared to relational maintenance IIs and those used to compensate for actual interaction, IIs used for conflict management and catharsis are more negatively valenced.

Discrepancy

The third attribute, discrepancy, describes how different (or similar) the imagined conversation is from the actual conversation. The function discussed most often in terms of discrepancy is rehearsal. For instance, Honeycutt (1989a) reported data collected from daily journals that showed rehearsal can enhance confidence about upcoming conversations. In addition, although practice will not completely nullify discrepancy between imagining and engaging in the conversation, Honeycutt (1989a) speculated that it should reduce discrepancy. In particular, using IIs to rehearse for upcoming conversations is thought to be most helpful because it can cause the individual to anticipate and prepare for ''on-line contingent actions to be manifested'' (Allen & Honeycutt, 1997, p. 78). In other words, using IIs for rehearsal

lowers discrepancy because it prepares the individual to plan more effectively and efficiently during the actual conversation.

H3: When compared to the other functions, IIs used for rehearsal are the least discrepant.

Discrepancy also plays a role in the conflict and catharsis functions. According to Conflict Linkage Theory, using IIs to keep conflict alive has the potential of distorting reality (Honeycutt, 2004). Likewise, especially when used to alleviate anxiety about an upcoming and potentially stressful situation, individuals tend to "catastrophize" or think about the situation as a worst case scenario (Honeycutt & Ford, 2001). Both of these uses, therefore, should result in reports of more discrepant IIs than when IIs are used for other purposes.

H4: When compared to the relational maintenance, self-understanding, and compensation functions, IIs used for conflict and catharsis are more discrepant.

Dominance

Dominance refers to the degree to which an II is self-dominant, where an individual and his or her imagined dialog are more prominent (Honeycutt, 2003). The II function most readily described as self-dominant is self-understanding, or using IIs to uncover core attitudes and beliefs. By definition, these IIs should include imagined dialog that reflects more self-dominance than the other functions.

H5: When compared to the other functions, using IIs for self-understanding exhibits the greatest degree of self-dominance.

Conversely, using IIs for both relational maintenance and compensation are more likely to include imagined dialog with romantic partners, friends, and family (Honeycutt, Edwards, & Zagacki, 1989) with a focus primarily on the valued relational partner, not the self.

H6: When compared to the other functions, IIs used for relational maintenance and compensation exhibit the least degree of self-dominance.

Variety

Variety refers to the number of relational partners and/or imagined topics in the II. Compensatory IIs, by definition, compensate for the lack of interaction, particularly with those important to our everyday life (Honeycutt, 2003). Inherent in this function, then, is that we compensate for actual interactions by imagining a variety of conversations over a variety of topics with a variety of partners.

H7: When compared to the other functions, IIs used for compensation has the highest reported variety.

Proactivity and retroactivity

Proactivity and retroactivity both refer to the timing of IIs in relation to actual encounters: Proactive IIs occur before interactions, while retroactive IIs occur after interactions. In proactive IIs, individuals are able to "stylize . . . intrapersonal anticipations, expectations, predictions, projections, hopes and forecasting" (Bruneau,

1989, p. 69) prior to any actual encounters, something that is most likely to happen when using IIs to rehearse or assist in making decisions (Honeycutt, 2003). In contrast, rehearsal IIs, by definition, are much less likely to occur after an actual conversation. On the basis of this association between the planning and timing of IIs, we propose the following hypothesis:

H8: When compared to the other functions, IIs used for rehearsal are the most proactive and least retroactive.

Specificity

The final attribute is specificity or the degree of "detail and distinction" reported in an II (Honeycutt, 2003, p. 26). Research finds that individuals can imagine specific dialog, nonverbal behaviors, or settings in their IIs, or the II can be quite vague. One way to operationalize specificity is to code the number of sensory channels used in reports of IIs, with those using both visual and verbal imagery (as opposed to just one of these modes) having more specific IIs (see Honeycutt, 1999). We posit that a compensatory use of IIs will likely lead to a greater degree of specificity than other uses of IIs: Since these IIs are used to make up for lost time with close others, individuals are likely to make the best use of that time and be as specific as possible, imagining the other individual and the conversation in visual and verbal detail.

H9: When compared to other functions, IIs used for compensation are the most specific.

Method

Participants and general procedures

Participants in Study 1 were undergraduate students ($N = 247$; 112 female, 3 missing) enrolled in Communication Studies courses at a university in the southern United States, although the majority were not Communication Studies majors ($n = 207$); only a small percentage were enrolled as a minor ($n = 23$). Participants ranged in age from 19 to 34 years old ($M = 20.29$, $SD = 2.10$, 5 missing) and were predominantly Caucasian (81; 13 African American, 4.9 Cajun, 4 Latino, 1.6 Native American, 2.4 Asian American, and 4% other including Pacific Islander, Chicano, and Creole).

Participants selected this study from an online bulletin board which listed available IRB approved studies and reported to a supervised computer laboratory in groups of up to 20. The survey first displayed a human subjects statement to comply with University IRB protocol; students were then provided with a general description of Imagined Interactions. After reading the general II description, participants were provided with a detailed description of a randomly generated function (see Appendix) followed by 30 semantic differential items (7-point) based on the attribute descriptions provided in the survey of imagined interactions (SII; Honeycutt, 2003). For example, in the questions evaluating the proactivity of IIs for a specific function, participants described their IIs as "Used to plan upcoming conversations/Not used to plan upcoming conversations," "Never used to anticipate an upcoming conversation/Used often to anticipate an upcoming conversation," and

Table 1 Model Fit Indices for II Attributes Model Within Each Function, Study 1

Function	χ^2	df	SRMR	CFI	RMSEA	Low[a]	High[a]
Catharsis	364.28	271	0.05	0.96	0.04	0.03	0.05
Compensation	513.22	271	0.06	0.91	0.06	0.05	0.07
Conflict management	552.62	271	0.06	0.88	0.07	0.06	0.07
Rehearsal	525.43	271	0.06	0.90	0.06	0.05	0.07
Relational maintenance	532.91	271	0.06	0.90	0.06	0.06	0.07
Self-understanding	487.23	271	0.06	0.90	0.06	0.05	0.07
Configural model	2975.69	1,626	0.05	0.91	0.02	0.02	0.03

Note: All model Chi-square statistics were significant at $p < .001$. CFI = comparative fit index; df = degrees of freedom; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.

[a]Low and high values are the lower- and upper-bound estimates of the 90% confidence interval for RMSEA, respectively.

"Done often before interactions/Never done before interactions." The same items were used for each function, and the internal consistency was adequate for all scales but variety (see below). Higher numbers on the scales indicate the following: more frequent, more positively valenced, more discrepant, more other-dominated talk, more proactivity, more retroactivity, more specificity, and more variety.

Results

Confirmatory factor analysis (CFA) was employed to answer RQ1 and test H1–H9. For tests of single measurement models, we examine the comparative fit index (CFI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA) (Kline, 2005).[1] To test measurement invariance, we examine change in these indices using a cutoff criterion of 0.01 (Cheung & Rensvold, 2002).

RQ1: Measurement invariance of attributes nested within function

In order to answer RQ1, we first fit six measurement models, one for each function, depicting eight correlated latent-factors (the attributes). Applicable items were reverse-coded before estimating model fit to ensure all questions followed the same direction. The initial model was misfit for all functions (CFIs < 0.90, RMSEAs > 0.08, SRMRs > 0.10). Inspection of standardized residual covariance matrices for each model, however, helped locate the model misfit to a similar set of items. In particular, one item was removed from self-dominance ("Focused on me: Focused on the other person"), and all three items representing topic variety ("Consistently covers one topic: Consistently covers multiple topics"; Never involves a variety of topics: Always focused on one topic"; "Focused on one topic: Includes multiple topics") were also removed from all models. After this modification, the 26-item model fit each function (see Table 1).

The second step toward answering RQ1 involved testing for measurement equivalence of the II attribute model for each function; for this purpose we employed the multiple-groups analysis within AMOS (see Byrne, 2010). Even though the model is adequately specified for each function, this does not "guarantee the equivalence of item measurements and underlying theoretical structure [across the two groups]" (Byrne, 2010, p. 205). To empirically demonstrate stability (or lack thereof) we tested for measurement invariance which deals with the psychometric properties of the scale and includes configural invariance (same factor structure holds across groups), metric invariance (factor loadings are equal across groups), scalar invariance (loadings and intercepts are equal across groups), and strict measurement invariance (loadings, intercepts, and item error variances are equal across groups) (Little, 1997).

The test for configural invariance involves testing model parameters for each group simultaneously; adequate fit for the configural model suggests there is equivalent fit for the attribute model within each function. After this baseline model (the configural model) is assessed, the following parameters are iteratively fixed to test for higher order equivalency: (1) factor loadings (measurement weights; metric invariance), (2) covariance of the factors (structural covariances; scalar invariance), and (3) error variance (measurement residuals; strict invariance).

The baseline (configural) model consisting of a combination of all eight individual models produced good fit (see Table 1), suggesting the number of attributes and pattern of their structure is similar across functions. When the measurement weights (factor loadings) were constrained to equality, however, the model fit statistics declined statistically, $\Delta\chi 2 = 439.01$, $\Delta(\text{df}) = 130$, $p < .001$, and substantively, $\Delta\text{CFI} = .03$. Thus, following procedures outlined by Byrne (2010), we tested for the invariance of all measurement weights comprising each subscale separately, iteratively constraining weights until there was evidence of model misfit. That evidence arose with regard to the variety (of people) attribute. In particular, two variety items ("Never involves a variety of people: Always involves a variety of people"; "Only involves one person: Involves multiple people") had to be allowed to freely vary in order to create an equivalent model across functions, resulting in a final model, $\chi 2\ (1{,}746) = 3184.52$, SRMR = .06, CFI = .90, RMSEA = .02 (90% CI: 02, 03). In other words, 24 of the 26 items are measuring the same attributes within each of the functions.

Using this partially metric-invariant model, we then constrained structural covariances, $\chi 2\ (1{,}886) = 3481.25$, SRMR = .06, CFI = .90, RMSEA = .02 (90 CI: 02, 03), followed by measurement residuals, $\chi 2\ (2{,}016) = 3725.72$, SRMR = .07, CFI = .88, RMSEA = .02 (90% CI: 02, 03). These results support scalar but not strict measurement invariance—in addition to the scale metrics, the item intercepts measuring attributes are the same across functions. Evidence for scalar invariance suggests that factor mean differences cause item mean differences; such a result provides an empirical rationale to investigate mean differences in attributes across functions (see below). Although the measurement residuals are variable, many

would agree that showing equivalence at the level of factor loadings and structural covariances is sufficient for claims of measurement invariance (Vandenberg & Lance, 2000).

Thus, the answer to RQ1 is "yes," with two qualifications: First, to achieve an adequate baseline model one item from self-dominance and all topic variety items were removed. Second, metric invariance was partial, and the problem was located to the people variety construct. As seen in Table 2, the only scale that did not achieve an adequate level of internal consistency was variety. Taken together, our results suggest measurement problems with II variety.

Tests of hypotheses

To test H1–H9, we imposed mean and covariance structure equality constraints on the retained model (partial metric invariance, full scalar invariance, no strict invariance). That model, as expected, returned substantively lower fit statistics, $\chi 2$ (1,846) = 3503.67, CFI = 0.84, RMSEA = 0.03 (90% CI: 02, 03), suggesting that the functions vary as the result of one or more of the attributes. Thus, we followed procedures outlined by Byrne to test for latent mean differences among the attributes for each combination of functions described in the hypotheses. All discrepancy scores are presented in Table 3, which provides data used to draw conclusions about support (or lack thereof) for our specific hypotheses.

Three hypotheses (H2, H7, H8) were fully supported. In support of H2, IIs used for conflict management and catharsis were each more negatively valenced than relational maintenance and compensation IIs. In full support of H7, IIs used for compensation exhibited more variety than all other functions. The final hypothesis fully supported by our data was H8, which predicted that rehearsal IIs are more proactive than the other functions.

Several hypotheses were partially supported. H1 predicted the functions of relational maintenance, conflict management and compensation are more frequent when compared to the catharsis function. Discrepancy scores showed that relational

Table 2 Internal Consistency Measures for II Attributes, Study 1

	Discrepancy	Frequency	Proactivity	Retro-activity	Dominance	Specificity	Valence	Variety
Catharsis	0.72	0.83	0.70	0.70	0.73	0.80	0.85	0.26
Compensation	0.71	0.87	0.69	0.70	0.77	0.80	0.85	0.20
Conflict management	0.75	0.80	0.73	0.70	0.80	0.79	0.83	0.08
Rehearsal	0.70	0.82	0.78	0.73	0.67	0.80	0.80	0.52
Relational maintenance	0.69	0.84	0.73	0.73	0.71	0.80	0.82	0.19
Self-understanding	0.66	0.82	0.67	0.70	0.79	0.81	0.77	0.08

Table 3 Latent Mean Discrepancy for Attributes by Function, Study 1

Functions	Discrepancy	Frequency	Proactivity	Retroactivity	Self-Dominance	Specificity	Valence	Variety
Catharsis	**H4**							
Compensation	−0.14	0.24*	−0.03	0.10	0.38***	0.24*	0.20*	0.28*
Conflict mgmt.	−0.22*	−0.06	−0.39***	−0.24*	0.14	−0.14	−0.38***	−0.01
Rehearsal	−0.35***	−0.33***	−0.62***	0.06	−0.07	−0.19	0.26**	−0.12
Relational maintenance	−0.21*	−0.17	−0.20	−0.05	0.30*	0.07	0.27*	−0.01
Self-understanding	−0.09	−0.07	−0.07	−0.05	0.06	−0.01	0.26**	0.03
Compensation		**H1**			**H6**	**H9**		**H7**
Catharsis	0.14	−0.24**	0.03	−0.10	−0.39***	−0.24*	−0.20*	−0.28*
Conflict mgmt.	−0.08	−0.31**	−0.36***	−0.38***	−0.25*	−0.38***	−0.58***	−0.29**
Rehearsal	−0.21*	−0.57***	−0.60***	−0.03	−0.46***	−0.43***	0.06	−0.41***
Relational maintenance	−0.07	−0.41***	−0.17	−0.15	−0.09	−0.17	0.07	−0.29**
Self-understanding	0.05	−0.31**	−0.04	−0.14	−0.33**	−0.25*	0.06	−0.25*
Conflict mgmt.	**H4**	**H1**						
Catharsis	0.22*	0.06	0.39***	0.24*	−0.14	0.14	0.38***	0.01
Compensation	0.08	0.31**	0.36***	0.34**	0.25*	0.38***	0.58***	0.29**
Rehearsal	−0.13	−0.26**	−0.23*	0.30**	−0.21*	−0.05	0.63***	−0.11
Relational maintenance	0.01	−0.11	0.19	0.19	0.16	0.21*	0.65***	0.01
Self-understanding	0.13	−0.01	0.33**	0.20	−0.08	0.13	0.64***	0.04
Rehearsal	**H3**		**H8**	**H8**				
Catharsis	0.35***	0.36***	0.62***	−0.06	0.07	0.19	−0.25	0.12
Compensation	0.21*	0.57***	0.59***	0.03	0.46***	0.43***	−0.06	0.41***
Conflict mgmt.	0.20*	0.25**	0.40***	−0.18*	0.22*	0.18*	−0.29***	0.11

Table 3 Continued

Functions	Discrepancy	Frequency	Proactivity	Retroactivity	Self-Dominance	Specificity	Valence	Variety
Relational maintenance	0.14	0.16	0.42***	−0.12	0.37***	0.26*	0.01	0.12
Self-understanding	0.20*	0.25*	0.40***	−0.18*	0.22*	0.18*	−0.30***	0.11
Relational		**H1**			**H6**		**H2**	
Catharsis	0.21*	0.17	0.20	0.05	−0.30*	−0.07	−0.27**	0.01
Compensation	0.07	0.41***	0.17	0.15	0.09	0.17	−0.07	0.29**
Conflict mgmt.	−0.01	0.11	−0.19	−0.19	−0.16	−0.21*	−0.65***	−0.01
Rehearsal	−0.14	−0.16	−0.43***	0.12	−0.37***	−0.26**	−0.01	−0.12
Self-understanding	0.13	0.10	0.133	0.01	−0.24*	−0.08	−0.01	0.04
Self-understanding					**H5**			
Catharsis	0.09	0.07	0.07	0.05	−0.06	0.01	−0.26**	−0.03
Compensation	−0.05	0.31**	0.04	0.14	0.33**	0.25*	−0.06	0.25*
Conflict mgmt.	−0.13	0.01	−0.33**	−0.20	0.08	−0.13	−0.64***	−0.04
Rehearsal	−0.26*	−0.25**	−0.56***	0.11	−0.13	−0.18	−0.01	−0.15
Relational	−0.13	−0.10	−0.13	−0.01	0.24*	0.08	0.01	−0.04

Note: All numbers represent discrepancy scores, derived by subtracting the latent mean of the comparison function from the latent mean of the primary function. Asterisks correspond to the statistical significance level as determined by a *Z*-test.
*$p < .05$. **$p < .01$. ***$p < .001$.

maintenance and conflict IIs were not used more frequently than IIs for catharsis. In support of the logic of H1, however, compensation was the most frequently reported function, differing from all other functions in this manner. H3, which predicted rehearsal IIs are the least discrepant, was supported for each function with the exception of relational maintenance. For H6, the compensation function was more directed toward others (less self-dominance) than all functions except relational maintenance; this latter function was different from all but conflict (and compensation) functions. Finally, H9 predicted compensation IIs would be the most specific, which was true for all comparisons except that with relational maintenance.

Finally, some hypotheses received little or no support. H4 was largely not supported. In particular, H4 predicted conflict management and catharsis IIs are more discrepant than those used for relational maintenance, self-understanding, and compensation. IIs used for catharsis were reported as more discrepant than rehearsal and relational maintenance IIs, while IIs used for conflict management were no more or less discrepant than any function other than catharsis. Similarly, H5 predicted IIs used for self-understanding would exhibit the highest degree of self-dominance. While this function differed in the predicted direction when compared to compensation and relational maintenance IIs, there was no difference when compared to catharsis, conflict, and rehearsal.

Brief discussion

Study 1 was conducted in the service of two primary goals: First, we sought to test the assumption implicit in II theory that II attributes are applicable to all six II functions. The first research question inspected this assumption by testing the degree of measurement invariance for an attributes-within-functions measurement model. Results suggested the tenability of invariance with the following qualifications: (a) configural invariance was based on the deletion of items including all three items written to measure topic variety; (b) metric invariance was only partial, and the variance was localized to the people variety scale suggesting either bad items or difference in interpretation of putatively good items based on II function. Thus, future research should seek to modify the items used in the present study and attempt to adjudicate among competing explanations for the noninvariance found in this sample.

The second goal of the study was to submit various aspects of II theory to direct empirical testing. In particular, we noted that while the heuristic potential of II theory is evident, the internal structure has gone largely untested. Our results provide both corroborative and counter evidence for II theory. In line with the internal structure of II theory, we found that conflict management and catharsis IIs are more negatively valenced than those used for compensation and relational maintenance (H2); rehearsal IIs are more likely to be discrepant than all functions except relational maintenance (H3) and are the most proactive (H8); and, when compared to all other functions, compensatory IIs contain references to more people (H7), and were more frequent (H1). It also appears that compensatory and relational maintenance

functions are similar insofar as each is equally directed to others and highly specific, providing support for the role of each in close interpersonal relationships (Honeycutt, Mapp, et al., 2009). In contrast to our predictions, relational maintenance and conflict IIs were used just as frequently as those for catharsis, and relational maintenance IIs were directed toward others in an equivalent manner as those used for conflict.

Study 2: Attributes and functions in multidimensional space

In Study 1, the attributes of IIs were examined as they occur in each function. II theory, however, asserts that the functions of IIs do not occur in isolation. Indeed, when considering the functions of IIs, "any combination of these functions may occur simultaneously" (Honeycutt, 2008, p. 80). For instance, whereas some relationally oriented IIs "review past relational episodes, others explore prospective relationships" (Honeycutt, Zagacki, & Edwards, 1992, p. 177). Indeed, Honeycutt (1995, 2003) discusses the identification of relational themes (e.g., cooperation–competition) by analyzing the linked imagined interactions that involve the replay of prior encounters while preparing for anticipated interactions. Imagined interactions are linked when a person recalls a prior conversation and replays it in his or her imagination while anticipating what could be said differently for an ensuing encounter. Hence, when a person describes their relationship as "friendly," they are recalling cooperative encounters in their mind as evidence for their claim or attribution of friendliness.

Thus, IIs which occur in relationships can serve to maintain them, deal with conflict within them, compensate for interaction when a partner is unavailable, rehearse for important upcoming conversations, and release emotional tension relevant to some important turning point (see Honeycutt, Mapp, et al., 2009). In recognition that a single II can serve multiple functions or incorporate various attributes, true tests of II theory should examine the multivariate associations among functions and attributes. Consequently, Study 2 sought to examine the multivariate nature of relations among functions and attributes using the standard instrument used in the extant research, the SII (Honeycutt, 2003). Since past work has only inspected small subsets of functions and attributes, we propose a general research question rather than specific hypotheses and thus provide a practical reference for future II research. By examining the multivariate associations among features of IIs using the standard measure used in empirical studies (i.e., the SII), future research may reference these findings for additional guidance when modifying the SII to explore specific research questions. In summary, Study 2 is guided by the following general research question:

RQ1: What are the multivariate associations among the functions and attributes?

Methods

Participants

Participants in Study 2 were undergraduates students ($N = 312$) enrolled in Communication Studies courses at a university in the southern United States. Participants selected this study from a bulletin board of available IRB approved studies and

reported to a supervised computer lab reserved for data collection in groups of 20. The survey first displayed a human subject's statement to comply with University IRB protocol; students then completed various measures, only one of which, the SII, is applicable to this study. In exchange for their participation, a small portion of class credit (1.5%) was granted. Study 2 did not run concurrently with Study 1 as the studies were run in separate semesters. Based on the wide variety of measures included in both studies, participants were not specifically excluded from participating in Study 2 if they had participated in Study 1.

In addition to survey instruments, respondents voluntarily reported their demographic information. Participants ranged in age from 18 to 43 years old ($M = 20.64$, $SD = 2.46$, 8 missing), and represented both males ($n = 154$) and females ($n = 150$), with 8 respondents not reporting their biological sex. In reporting ethnicity, participants could check more than one option, but the participants were predominantly Caucasian (79.8%), with other ethnicities also represented (12.5% African American, 3.9% Latino/Hispanic, 2.2% Native American, 1.9% Asian American, 0.3% other). All academic years were represented: freshman ($n = 30$), sophomore ($n = 104$), junior ($n = 80$), and senior ($n = 88$).

Survey of imagined interactions

This instrument asked a total of 60 scaled questions (7-point Likert) about the participant's II activity. Table 4 reports the zero-order correlations and estimates of internal consistency for the functions and attributes of IIs.

A model representing the six functions of IIs was created to analyze model fit; all functions were allowed to covary. After removing two items from the catharsis function (''By thinking about important conversations, it actually increases tension, anxiety, and stress''; ''Imagined Interactions make me feel nervous and tense when thinking about what another says''), one item from compensation (''it is rare for me to imagine talking with someone outside of his or her physical presence because I believe in the saying, 'Out of sight, out of mind'''), and three items from conflict management (''My imagined interactions usually involve conflicts or arguments''; ''I rarely replay old arguments in my mind''; ''I often cannot get negative imagined interactions 'out of mind' when I'm angry'') the overall model was adequate: $\chi 2 (137) = 446.20$, $p < .001$, CFI = 0.90, SRMR = 0.06, RMSEA = 0.09 (0.08, 0.10), with each latent function represented by 2–4 items.

A model representing the eight attributes of IIs was created to analyze model fit, and all latent factors were allowed to freely covary. After removing two items from variety (''I have recurring imagined interactions with the same individual over the same topic''; ''Many of my imagined interactions are with the same person''), two items from discrepancy (''I usually say in real life what I imagined I would''; ''My imagined interactions are quite similar to the real conversations which follow them''), two items from self-dominance (''The other person dominates the conversation in my imagined interactions''; ''When I have imagined interactions, the other person talks a lot''), and one item from valence (''My imagined interactions are usually

Table 4 Zero-Order Correlations and Reliabilities for II Functions and II Attributes, Study 2

II Feature	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Catharsis	*0.74*													
2. Compensation	0.23***	*0.85*												
3. Conflict management	0.39***	0.12*	*0.50*											
4. Rehearsal	0.58***	0.01	0.51***	*0.87*										
5. Relational maintenance	0.38***	0.07	0.38***	0.40***	*0.87*									
6. Self-understanding	0.53***	0.11*	0.55***	0.67***	0.49***	*0.84*								
7. Discrepancy	−0.06	−0.19***	−0.03	0.02	0.07	−0.00	*0.79*							
8. Frequency	−0.24***	−0.04	−0.35***	−0.38***	−0.32***	−0.37***	0.21***	*0.84*						
9. Proactive	−0.30***	0.10	−0.38***	−0.57***	−0.30***	−0.43***	0.15	0.62***	*0.83*					
10. Retroactive	0.27***	0.01	−0.37***	−0.40***	−0.27***	−0.37***	0.25***	0.58***	0.64***	*0.82*				
11. Self-dominated	0.24***	−0.12*	−0.20***	−0.31***	−0.07	0.30***	0.36***	0.39***	0.32***	0.41***	*0.75*			
12. Specific	0.27***	−0.01	−0.25***	−0.40***	−0.29***	0.37***	0.15**	0.49***	0.41***	0.46***	0.46***	*0.71*		
13. Valence	−0.31***	0.11	−0.15**	−0.32***	−0.24***	0.27***	0.11	0.37***	0.35***	0.34***	0.20**	0.49***	*0.82*	
14. Variety	−0.18**	−0.04	−0.20***	−0.25***	−0.10	−0.20***	0.19***	0.51***	0.43***	0.51***	0.29***	0.35***	0.35***	*0.74*

Note: Internal consistency estimates (Cronbach's alpha) are presented along the diagonal.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 5 Canonical Correlations of II Functions and II Attributes, Study 2

	Significant dimensions		
Variables	Dimension 1	Dimension 2	Dimension 3
II Functions			
IIF catharsis	**−0.529**	−0.108	**0.318**
IIF compensation	0.207	**−0.765**	−0.099
IIF conflict	**−0.584**	**−0.397**	**−0.465**
IIF rehearsal	**−0.935**	−0.206	0.185
IIF relational maint.	**−0.566**	0.249	**−0.548**
IIF self understanding	**−0.756**	**−0.315**	−0.045
II Attributes			
IIC discrepancy	**0.622**	**0.366**	**0.462**
IIC frequency	−0.110	**0.565**	−0.108
IIC proactive	**0.893**	0.150	0.243
IIC retroactive	**0.657**	0.280	0.243
IIC self dominated	**0.399**	**0.722**	**−0.380**
IIC specific	**0.637**	0.120	−0.055
IIC valence	**0.527**	**−0.337**	−0.248
IIC variety	**0.367**	**0.320**	−0.040

Note: Loadings higher than 0.300 are in bold.

quite unpleasant''), the overall model fit was adequate: $\chi 2\ (271) = 601.49$, $p < .001$, CFI = 0.92, SRMR = 0.06, RMSEA = 0.07 (0.06, 0.07), with each latent attribute represented by 2–4 items.

Results

In order to answer RQ1, a canonical correlation was performed between the two variable sets (i.e., functions and attributes). The overall model was significant, Wilks $\Lambda = 0.432$, $F\ (48, 1411.30) = 5.47$, $p < .001$, and revealed three significant dimensions with no variables excluded due to multicollinearity. The first root accounted for 32.58% of the variance; the second, 16.65%; the third, 6.40%; resulting in the three roots accounting for 55.63% of the total variance between the two data sets. The canonical loadings for the three dimensions are reported in Table 5.

The first significant dimension, Wilks $\Lambda = 0.432$, $F\ (48, 1411.30) = 5.47$, $p < .001$, revealed a strong correlation, $r = 0.67$, $r^2 = 0.44$. Lower reported usage of IIs for rehearsal, self-understanding, conflict management, relational maintenance, and catharsis are associated with higher proactivity, retroactivity, specificity, frequency, and variety.

The second significant dimension, Wilks $\Lambda = 0.771$, $F\ (35, 1209.73) = 2.19$, $p < .001$, reveals a moderate correlation, $r = 0.31$, $r^2 = 0.10$, as compared to the first dimension. Lower reported usage of IIs for compensation is associated

with higher self-dominance, discrepancy, frequency, and valence, as well as lower variety.

The third and final significant dimension, Wilks $\Lambda = 0.853$, $F(24, 1005.92) = 1.95$, $p < .004$, was equivalent in magnitude to the second dimension, $r = 0.28$, $r^2 = 0.08$. Lower usage of IIs for relational maintenance and conflict management and higher usage of IIs for catharsis is associated with higher frequency and lower self-dominance.

Brief discussion

The research question guiding this study was based on the associations among the attributes and functions of IIs as measured with the SII. To answer this question, we conducted a canonical correlation which revealed three dimensions. The first dimension contained all functions except compensation and all attributes except frequency. The pattern of results implied by this dimension (see Table 5) provide little insight into how the functions might differ, but instead seem to suggest a multivariate association at the most fundamental level—that is, the functions can be described by the various attributes. Such a finding is consistent with results of Study 1 which found the attribute measurement model well-fitting within each of the six functions. Thus, one plausible explanation for this dimension is that it was driven primarily by the fact that the functions and attributes included in II theory are related.

This explanation does not, however, account for why compensation is not included as a function nor why frequency is not included as an attribute. For the former, perhaps the compensation function is conceptually distinct. Whereas compensation refers to imagined conversations with others with whom one is not able to actually communicate, the other functions describe uses of IIs to plan for conversations that are likely going to happen at some point in the future or to rehearse conversations that actually did happen at some point in the past. Judging by the zero-order correlations presented in Table 4, the compensation function correlates only minimally with the other functions with two correlations not reaching conventional levels of statistical significance and the majority of the remainder being quite small in magnitude suggesting the potential for the compensation function to be conceptually orthogonal. Perhaps a similar explanation accounts for frequency not loading on this dimension; that is, frequency seems to describe a different type of attribute than the other attributes. Whereas frequency references how often IIs typically occur, the other attributes seem to describe the internal structure or variability of individual IIs. Of course, this explanation is speculative, thus future research should certainly continue to explore it and other alternative explanations for the present results.

The second dimension contained the compensation, conflict, and self-understanding functions along with five of the eight attributes (excluding both timing attributes and specificity). In particular, and judging by the relative magnitude of the canonical loadings, when using compensatory IIs that help manage conflict and promote self-understanding, individuals report those IIs to be self-dominant,

frequent, similar to the actual interaction, positively valenced, and containing relatively few interlocutors.

The final dimension contained the functions of catharsis, conflict, and relational maintenance along with the discrepancy and dominance attributes. Thus, when using IIs to manage relationships and handle conflict with the absence of emotional catharsis, people report them to be more self-dominant and less discrepant. Perhaps this dimension also suggests that the relationship and conflict management functions differ from the catharsis primarily by virtue of dominance and discrepancy, a finding in line with results from Study 1.

General discussion

Although alluded to in the discussion for Study 2, this section attempts to discuss the general findings from both studies, each of which revealed complex associations between the attributes and functions of Imagined Interactions (IIs). In order to facilitate the discussion, Table 6 is a summary of predicted and observed findings from Study 1. We organize our discussion around each attribute following these hypotheses and incorporate findings from Study 2 as they are relevant.

In Study 1 we predicted that IIs used for relational maintenance, conflict management, and compensation are more frequent than those used for catharsis. Results suggested, however, that II frequency could primarily explain a difference between compensation and catharsis. The multivariate findings from Study 2 further suggest compensatory IIs used simultaneously to manage conflict and promote self-understanding are reported as frequent and that a lack of II use for compensation but a relatively strong use for the other functions are not associated with frequency. This suggests that compensatory IIs are highly related to the frequency

Table 6 Summary of Predicted and Observed Findings for Study 1

II Attributes	Predicted	H	Observed
Frequency	RM, CM, CP > EC	H1	CP > EC
Negative valence	CM, EC > RM, CP	H2	CM, EC > RM, CP
Discrepancy	R < RM, CM, CP, EC, SU	H3	R < RM, CM, CP, EC, SU
	RM, SU, CP > CM, EC	H4	*No differences*
Self-dominance	SU > RM, CM, CP, EC, R	H5	*No differences*
	RM, CP < CM, SU, EC, R	H6	RM, CP < CM, SU, EC, R
Variety	CP > RM, CM, SU, EC, R	H7	CP > RM, CM, SU, EC, R
Proactivity	R > CP, RM, CM, SU, EC	H8	R > CP, RM, CM, SU, EC
Retroactivity	R < CP, RM, CM, SU, EC	H8	R < CP, RM, CM, SU, EC
Specificity	CP > RM, CM, SU, EC, R	H9	CP, RM > CM, SU, EC, R

CM = conflict management; CP = compensation; EC = emotional catharsis; R = rehearsal; RM = relational maintenance; SU = self-understanding.

attribute. Future research and theory building should continue to study this relationship between frequency and compensation and posit competing explanations for it.

Study 1 also found that negatively valenced IIs occur more with conflict linkage and catharsis compared to relational maintenance and compensation. Moreover, the canonical findings for Study 2 reveal that compensation (canonical $R = .207$) had the lowest loading on the first canonical dimension and was the only positive (but not substantive; Tabachnik & Fidell, 2007) loading function on this dimension. Previously, we suggested that the compensation function might be a uniquely patterned use of IIs, and we stress that future work should be conducted on how it differs from as well as how it is used in conjunction with other functions to produce unique patterns of attributes.

As expected, Study 1 found that when people use the rehearsal function, there is less discrepancy between the II and an actual interaction. Less discrepancy is also reported for IIs used for relational maintenance insofar as quality relationships reflect relational maintenance. Honeycutt (2008–2009) reported how the lack of discrepant IIs is associated with relational quality, and other work shows that rehearsal tends to help the planning process. In essence, our studies seem to corroborate others revealing that discrepant IIs are associated with conflict and ruminating about arguments (Honeycutt, 2010b; Hample et al., 2012).

Self-dominant IIs are associated with conflict management, self understanding, and rehearsal as revealed in Study 1. Zagacki and his associates (1992) had similar results. Moreover, they found that mixed imagery (imagery involving both visual and verbal components) was associated with conflictual IIs as people thought about the content of their arguments.

Having a variety of IIs was found for the compensation function compared to other functions. Hence, when the interaction partner is unavailable for texting or talk, the imaginary topics may be diverse. The fact that this compensates for the lack of real communication is important because extant research by Stafford and Reske (1990) revealed a pattern of restricted communication among long-distance relationships in which partners may idealize each other as a consequence of absence. Indeed, there is speculation that long-distance partners due to limited contact may postpone realistic evaluations of each other. Yet, with the availability of social media and technology, additional research is warranted to examine if idealization has declined as a consequence of technological access to communication.

As expected, proactivity was associated most strongly with the rehearsal function compared to other functions while retroactivity was least associated with rehearsal. A critical warning is offered here; these findings are not trite and inane because they reveal how IIs are examples of mindful thinking. According to prominent psychological definitions, mindfulness refers to a quality that involves bringing one's complete attention to the present experience on a moment-to-moment basis, paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally as well as a nonjudgmental, present-centered awareness in which

each thought, feeling, or sensation that arises in the stimulus field is acknowledged and accepted as it is (Bishop et al. 2004).

Honeycutt (2003) discusses how IIs are mindful activities in which the individual is fully aware of their mental imagery and how he or she can plan messages. Message planning is strategic until individuals are challenged on the viability of their cognitive plans (Berger, 1996). When plans are called into question, individuals often become cognitive misers and stick with their plans even if they are failing because changing them requires more cognitive effort, time, and research. Individuals often find it easier to stick with failed plans such as merely restating claims (metathought: You must not have understood what I said) and stating the claims with a louder voice (metathought: You must not have heard what I said, so I will restate it with more emphasis and a louder volume due to a hearing deficiency). Yet, proactive IIs used to rehearse messages allow individuals to plan contingencies as well as create flexible plans (Allen & Honeycutt, 1990).

Specificity was associated with use of compensation and maintaining relationships. Prior research has also revealed a slight association between specificity and relational quality (Honeycutt, 2008–2009). On the one hand, Honeycutt and Bryan (2011) discuss the classic maxim of ''absence makes the heart fonder'' in terms of IIs for relational maintenance. In fact, they report how engaged partners had more IIs, IIs that were positively valenced, and IIs that were used to compensate for the lack of real interaction than did marital partners. They speculated that there also may be less rehearsal among the engaged partners due to less conflict in the honeymoon phase of their relational development.

In summary, many of the findings from the canonical analysis in Study 2 complemented the results from Study 1. There was confirmatory evidence that conflict management and catharsis IIs are more negatively valenced than those used for compensation and relational maintenance; rehearsal IIs are more likely to be discrepant than all functions except relational maintenance and are the most proactive. When compared to other functions, compensatory IIs contain references to more people and were more frequent. A careful and meticulous examination of the nuances of the three canonical dimensions, however, reveal some differences from the results in Study 1. One example is that IIs used for rehearsal had a negative loading on the first canonical dimension while pro and retroactivity had positive loadings, whereas Study 1 revealed that IIs used for proactivity were most associated with rehearsal and least associated with retroactivity. So how are subtle differences between these studies reconciled? One explanation has to do with the choice of measurements.

Measurement choices and future research

Honeycutt (2010a) discusses how imagined interactions may be measured through a triangulation of measures including surveys, qualitative journal accounts, interviews, and the induction of IIs using a talk aloud procedure and written protocols.

He has reviewed the literature on the veridicality of retroactive reports of cognitive processes. For example, in a pioneering piece, Ericsson and Simon (1980) offer guidelines when retrospective verbalization is made including providing contextual information and prompts to participants aids recall from long-term memory.

Furthermore, Honeycutt (2010a) offers precise instructions for contextualizing items from the SII. The attributes and functions may be measured in terms of personality traits as well as in specific contexts. Indeed, "it is important to contextualize items for specific research domains" including the specification of a particular interaction partner, scene, or situation (Honeycutt, 2010a, p. 205). Hence, the correspondence between attributes and functions measured as a trait (Study 2) may reveal different findings than when contextualizing attributes within each function as was done in the first study. Relatedly, Van Kelegom and Wright (in press) report positive correlations between episodic and partner-specific imagined interactions among romantic partners. In general, Honeycutt (2010a) notes how the SII can be modified depending on the researcher's needs by adding or contextualizing items. Thus, future research should seek to modify the items used in the present study and attempt to adjudicate among competing explanations for the noninvariance found in Study 1.

The final methodological limitation concerns the self-reported nature of our data. In particular, our results suffer from the possibility of common method variance (CMV) or "systematic error variance shared among variables measured with and introduced as a function of the same method and/or source" (Richardson, Simmering, & Sturman, 2009). In an extensive review of the techniques available for researchers to uncover potential biasing from CMV, Richardson et al. provide evidence that two of the more popular techniques for identifying CMV "produce less accurate estimates of relationships than applying no statistical correction" (p. 793). The one technique identified as capable of identifying CMV when it exists, namely the CFA marker approach, could not be applied to our data as we did not include an ideal marker along with the measures of II features. An ideal marker is one "theoretically unrelated to substantive variables and for which its expected correlation with these substantive variables is 0" (Williams, Hartman, & Cavazotte, 2010, p. 478). Of course, given the "crud factor" discussed by Meehl (1990) it is hard to imagine a variable with a completely zero correlation to most of the constructs we purport to measure in communication science.

Lindell and Whitney (2001) have suggested using the variable in the dataset with the smallest correlation with substantive variables and arbitrarily selecting it as the marker, though this technique suggests researches are supposed to include multiple nonsense variables in studies that are likely already pushing concerns of participant fatigue; the marker technique more generally also suffers from various other drawbacks (Podsakoff, MacKenzie, & Podsakoff, 2012). Future work on II theory (and indeed future work in Communication more generally) should be aware of and take measures to mitigate the potential for CMV to influence results. The use

of multitrait-multimethod techniques is an important contribution to our literature; though very few are available upon which to draw more general conclusions about the influence of CMV in communication research (Kotowski et al., 2009). When MTMM studies are not feasible, the measures used as ideal markers, if they can be identified, should match study goals and, like a good experiment, lead us to the best counterfactual evidence possible that method bias is not a plausible explanation for obtained results.

Limitations notwithstanding, we are comforted by the fact that many of the predictions stemming from II theory have been supported in past work which has relied on a variety of measurement techniques—not only self-reported II attributes and functions but also behavioral, reaction time, and other data not measured at the level of self-report. Future work should attempt to replicate the results from these studies and continue to test the internal structure of II theory with a range of samples drawn from diverse populations and using a variety of measurement techniques. If past work is any indication, II theory is a rich and heuristic theory with the potential to shed light on fundamental issues regarding communication and social cognition and about how what we think influences how we speak and listen.

Note

1 We considered as adequate models that exhibited a CFI value at or above 0.90, a SRMR value at or below 0.08, and a point estimate of RMSEA at or below 0.08 with the upper bound of the 90% confidence interval not exceeding 0.10 (see Kline, 2005). Chi square values were not considered in judging model fit.

Appendix: Study 1 Function Descriptions

Catharsis

Catharsis refers to having imagined interactions in order to relief tension and anxiety. In other words, some people report using IIs as a means of "getting things off your chest," to help release negative emotion, or to reduce uncertainty about another's actions.

Managing conflict

Imagined interactions can be used to help manage conflict. Using IIs for this function, people think about old arguments and plan for upcoming topics of disagreement. Imagined interactions have also been reported in research to keep conflict alive as people reflect and ruminate on old arguments.

Compensation

Compensation refers to having imagined interactions in order to substitute for real interaction. People in long-distance relationships report using these but so do some

people in close proximal relationship who report talking with their partner because they are not able to actually communicate or text them. Compensation simply refers to the function that might fill the lack of opportunity to actually communicate with an absent partner.

Rehearsal

Rehearsal refers to using IIs in order to plan what to say in an upcoming conversation. Whenever you think about an upcoming conversation, what you'll say or how you'll say it, you are using IIs for rehearsal. Before interacting with others, some people plan what they'll say, whereas others do not think much at all about the upcoming conversation. We are interested in the nature of your IIs that serve to rehearse for upcoming conversations in general.

Relational maintenance

Significant others are people we feel close to in our daily lives. Some people use IIs because they feel doing so can help maintain relationships with important others including loved ones, family members, romantic partners, mentors, work associates, and friends.

Self-understanding

Self-understanding refers to imagined interactions that are used by people in an attempt to understand the reasoning behind their beliefs, values, and attitudes. When IIs are used to understand ourselves better, we are engaged in the self-understanding function.

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