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The Echo Listening Profile: Initial Validity Evidence for a Measure of Four Listening Habits

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This article contributes to the larger literature on **meaning construction and misunderstanding by developing a typology of listening habits and a corresponding scale to measure individual differences in typical ways of listening**. Our typology includes four habits of listening grounded in two underlying aspects of meaning, content and relational, found in any spoken message. **Analytical Listening (AL)** involves filtering information through an **interest in results and facts**, while **Conceptual Listening (CL)** involves filtering information through an **interest in concepts and possibilities**. **Connective Listening (CV)** involves filtering information **through interests in others** (people, groups, processes, or audiences), while **Reflective Listening (RV)** involves filtering information through one's **own interests and purposes**. Results from two studies provide construct, convergent, and discriminant validity evidence for the resulting ECHO Listening Profile. In particular, exploratory and confirmatory factor analyses were used to create a 40-item version of the ECHO Listening Profile (ECHO) that was shown to map onto a conceptually similar measure of listening habits, the Listening Style Profile; ECHO did not, however, fully duplicate that scale and thus adds to our knowledge of how all listening is biased. Moreover, through use of comparative forced-choice scaling, ECHO reduces concerns found with self-reporting of listening, including response bias. Future work investigating the impact of Connective, Reflective, Analytical, and Conceptual Listening on how people navigate their personal and professional lives is warranted.

Most people spend a good deal of their waking hours interacting with others (Duck, Rutt, Hurst, & Strejc, 1991). **Studies attempting to document how much time people spend in particular communication activities have estimated that as much as two-thirds of our time is spent listening –**

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Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/hijl

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during class, on the telephone, in meetings, and for enjoyment (e.g., listening to music), just to name a few categories (Bodie, 2018). By listening, most scholars are referring to a set of cognitive processes that begins with the ability to detect sounds and other physical input (e.g., visual cues; Bodie & Wolvin, *in press*) that then undergo various manipulations (e.g., attention, interpretation, evaluation; for reviews of listening models, see Wolvin, 1989; Worthington, 2018). When listening, therefore, people do much more than simply record the exact words and phrases used by a speaker (Burlinson, 2011; Edwards, 2011); and because what someone says is not necessarily what we hear, comprehend, or remember, misunderstandings are common (Edwards, Bybee, Frost, Harvey, & Navarro, 2017). Although misunderstanding is a normal aspect of human communication, it can be the cause of serious threats to individuals, relationships, organizations, and society at large (Coupland, Wiemann, & Giles, 1991).

In their most basic form, misunderstandings result from interlocutors acting on different meanings they have constructed from the same message (Banks, Ge, & Baker, 1991). The problem with human communication is that it does not operate like a conduit, taking the thoughts of one person (the speaker) and directly conveying them to another (the listener) (Reddy, 1979). Instead, research across the academic landscape confers that each person interprets environmental stimuli based on their own habits, patterns of behavior, and ways of knowing that are learned over a lifetime and that impact all facets of our lives (e.g., Evans, 2003). With respect to listening in particular, people must make sense of what they hear by choosing from a set of possible (or probable) meanings, meanings that they construct based on prior knowledge and that are shaped by experience and typical ways of listening (Burlinson, 2011).

This article seeks to contribute to the larger literature on meaning construction and misunderstanding by developing a typology of listening habits and a corresponding scale to measure individual differences in typical ways of listening. The ECHO Listening Profile was designed to measure four habitual orientations toward listening in a way that avoids typical concerns with single-stimulus scaling (e.g., Likert, semantic differential). ECHO stands for Effective Communication for Healthy Organizations, and the Profile is a cognitive-based measure assessing how individuals tend to interpret what they hear. To the extent that any two individuals tend toward a different set of listening habits, they are likely to take different types of information away from any given interaction. And when individuals leave an interaction with different constructed meanings, the likelihood of misunderstanding increases. Thus, the ECHO Listening Profile can assist individual listeners in understanding how selective interpretation affects their communication with others as well as provide organizations with insights that can improve productivity. In the following sections, we provide the theoretical framework from which we derive our typology and detail our methods for constructing and providing initial validity evidence for our measure.

Deriving a typology of listening habits

Although there are examples of unequivocal or otherwise “clear” messages, much of what people say or interpret others as saying can be misinterpreted. Accounting for some of the potential for a single message to have multiple meanings is the nature of meaning itself. One of the most basic classifications of meaning comes from the second axiom of human communication proposed by Watzlawick, Beavin, and Jackson (1967): Underlying all messages are two fundamental aspects. The report aspect, otherwise known as the content meaning, is the

information being conveyed and largely equivalent to the conventional meaning of the words being used – what can be found in a dictionary, for instance, would be the content meaning of a particular word. The command aspect, otherwise known as relational meaning, on the other hand “refers to what sort of a message it is to be taken as, and, therefore, ultimately to the *relationship between the communicants*” (p. 52; emphasis in original). Whenever people speak, people are not only conveying information but also defining our relationship with the interlocutor. In general, this division of meaning suggests that when listening, people must interpret not only what others say (the content) but also the implied relationship given specific word choices and the surrounding context.

Edwards and colleagues have utilized this basic division of meaning in their work on message interpretation, defined as “the meanings attributed by a target to a specific message (or set of messages) within a communication context, including how the recipient of the message interprets the source’s relational intent” (Edwards, 1998, p. 54). Message interpretation research has found consistent evidence that how people come to understand others “is not simply a function of the words in an utterance, or the behaviors of an action; instead, individuals who decode those utterances or behaviors bring their own experiences and biases to bear using top-down processing” (Edwards, 2011, p. 58). Most of this work has relied on the use of hypothetical vignettes, presented in written form; the role of specific listening filters has thus not been examined. The typology we present below offers one way of conceptualizing the types of top-down processing likely to occur when the work of message interpretation is taken off the page and placed into the real lives of individuals. We propose that each person listens to and for different types of information based partially on the routines they have established by listening in particular ways (i.e., listening habits).

A typology of listening habits

As seen in Figure 1, our typology of listening habits is based on the dimensions of meaning upon which listeners can focus, that is the content and relational aspects of messages. The first two listening habits, Analytical Listening (AL) and Conceptual Listening (CL) deal primarily with how people tend to focus on different aspects of message content. AL represents a focus on what the interaction means to an issue or objective situation and involves filtering information through an interest in results and facts. Conceptual Listening (CL) represents a focus on the big picture and ideas, often abstract in nature, and involves filtering information through an interest in concepts and possibilities. In short, CL focuses on the “forest,” while AL focuses on the “trees.”

As noted by Edwards et al. (2017) there are two elements of message content, denotation and connotation: “[essentially], denotation refers to the socially agreed-upon meanings of signs, whereas connotations are dependent on individual meaning and context” (p. 191). Listeners who habituate toward AL will tend to focus on what is readily available in the specific words and other components of a message, its strict denotative meaning, while listeners who habituate toward CL will tend to focus on what is possible as a function of the various connotative meanings the message might elicit.

The second two listening habits, Connective Listening (CV) and Reflective Listening (RV) deal primarily with how people construct relational meaning from messages. CV represents a focus on what the interaction means for others and involves filtering

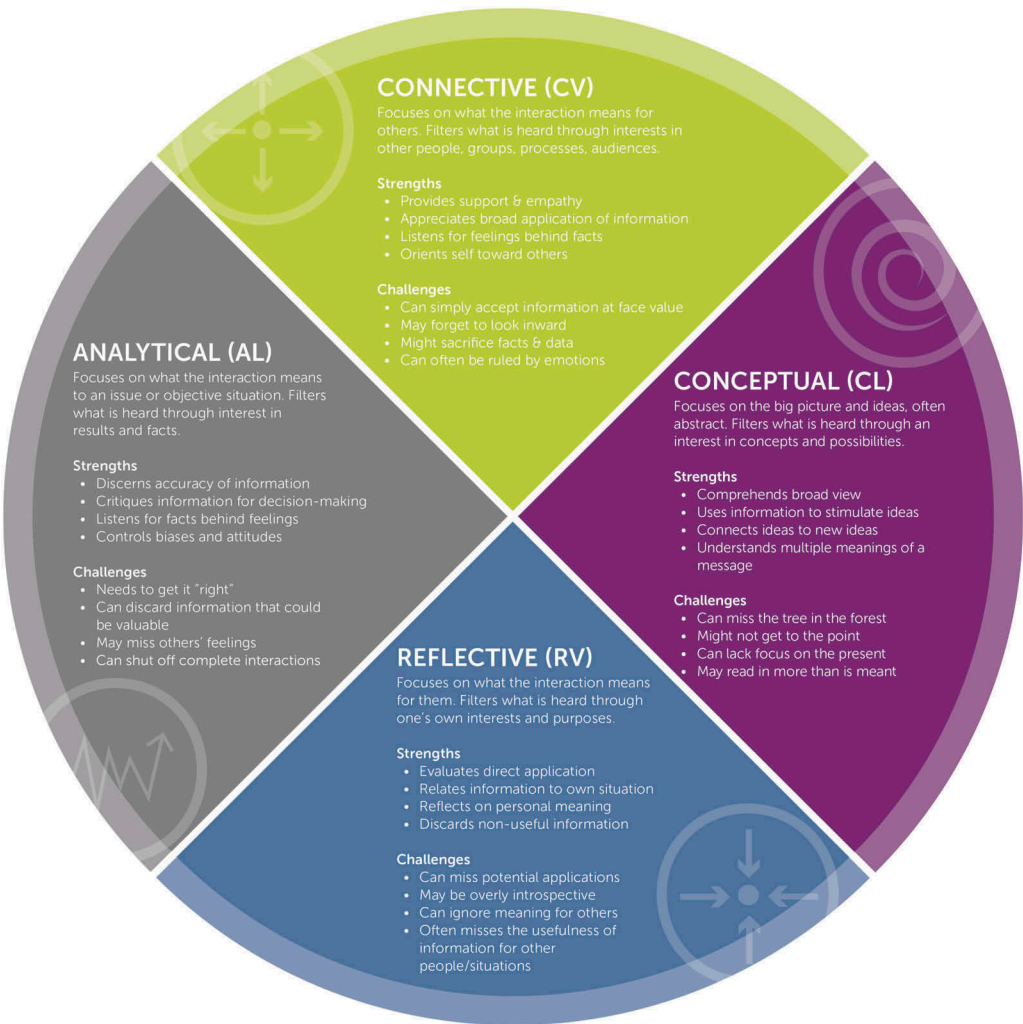


FIGURE 1 The ECHO Listening Profile typology with example characteristics of four listening habits. ©ECHO Listening, 2019.

information through interests in other people, groups, processes, and audiences. RV represents a focus on what the interaction means for the listener and involves **filtering information through one's own interests and purposes**. As an embodiment of the relational aspect of messages, the identification of CV and RV suggests listeners can focus more-or-less on relational aspects of messages with **RV reflecting little attention paid to how information might affect others or the relationships between people and CV reflecting heightened awareness and attention paid to the relational elements of speech.**

To illustrate these four listening habits, imagine a large, multinational corporation announces an impending merger at a meeting attended by several company managers. Among these managers are four individuals, each of whom highly demonstrates one of the four different listening habits: Connective (A), Reflective (B), Analytical (C), and Conceptual (D). A, although not immune from thinking about their own concerns, is more likely to think, at first, what effect the merger will have on the team. A is most likely to consider the effect on team morale and how the merger may affect company culture. Alternatively, B will initially consider what the change will mean for her, filtering the announcement based on past experience and current purposes: Could it lead to a promotion? Could her position be terminated? What does this mean for her impending client contracts? C, with a tendency to focus on facts and details, will likely hone in on the specifics of the merger if any are given (e.g., the costs to the company, the specific timing and steps of implementation, what this means for the bottom-line); if not, C will leave the meeting not only frustrated but quite unfulfilled. Finally, D is most likely to imagine possibilities that stem from the restructure and will begin to brainstorm scenarios that involve multiple potentials: What new products and services will the company now be positioned to invest in? What new demographics will the company have access to, and how might that affect their offerings already in place?

STUDY 1: INITIAL ITEM DEVELOPMENT AND REFINEMENT

To enable the measurement of listening habits, our team generated characteristics of connective, reflective, analytical, and conceptual listening; a sample of these characteristics is listed in [Figure 1](#). We then used these characteristics to derive an initial pool of items suitable to measure the four listening habits described above.

When creating a measure that attempts to capture individual variability in some aspect of listening, researchers most often turn to Likert scaling (strongly agree-strongly disagree) or some other single-stimulus method (Bodie & Jones, 2017). While there are merits to this form of scaling, there also are limitations, particularly as it relates to measuring listening. For one, listening is a socially desirable behavior, and thus its measurement is plagued with social-desirability effects (Lawson & Winkelman, 2003). In one study, for instance, Ford, Wolvin, and Chung (2000) reported student self-perceptions of listening competence at or around four on a five-point scale with ratings decreasing over the course of an academic semester. As the authors explained the drop in competence ratings: “direct instruction in listening provides students with a more realistic appraisal of their listening competencies” (pp. 10–11).

As the Ford et al. (2000) study demonstrated, single-stimulus scaling may provide inflated evaluations of respondent attitudes, traits, and behaviors (see also Brown & Maydeu-Olivares, 2013). To reduce biases that result from single-stimulus scaling, we employed a multidimensional forced-choice response format, utilizing blocks of four responses that allow respondents to make comparisons among all four listening habits several times while completing items. For example, the prompt “When I listen, I try to...” was followed with four choices: provide support and show empathy, understand how the information relates to me, scan what is being said for accuracy, think of good

ideas to add to the conversation. Each choice aligns with one of the four habits, connective, reflective, analytical, and conceptual, respectively. For purposes of this first study, we developed 43 blocks of items; that is, we wrote 172 answer choices nested within 43 item prompts.

Methods

Participants

All item blocks were administered to a sample of 788 members of Amazon's Mechanical Turk during the month of June, 2018. All participants were living in the United States and the high-school graduates. Participants were offered US \$2.00 in return for their participation.

Procedures

Participants were first directed to a secure URL that described the purpose of the study and provided an opportunity to give informed consent. All procedures were approved by the Institutional Review Board at The University of Mississippi. All 43 blocks of items were presented in random order, and answer choices were presented in random order within each block. Mixed within these item blocks were two attention checks prompted with "To show you are paying attention, please place these answer choices in alphabetical order" and followed by four items to match the ranking task (e.g., evaluate the content, my next commitment can wait, provide support and show empathy, stimulate my thinking). The 256 participants who failed one of the attention checks were eliminated from the dataset, resulting in 532 usable surveys.

Analyses

All analyses were carried out in Mplus version 8.1 (Muthén & Muthén, 2017). Exploratory and confirmatory factor models were estimated using the unweighted least squares estimator with robust standard errors (denoted ULSMV in Mplus). Unfortunately, for models with many categorical outcomes (the 43-blocks produced 256 dependent variables), current software capabilities prevented us from computing chi-square and the standard errors of model parameters. Subsequently, other fit indices based on chi-square such as RMSEA and CFI are not available; however, the Standardized Root Mean-square Residual (SRMR) is available. Values of *SRMR* under 0.08 indicate close fit of data to model (Hu & Bentler, 1999).

¹ As in the example provided on page 4, A = Connective, B = Reflective, C = Analytical, and D = Conceptual.

Exploratory factor analysis

Analyses started with exploration of a factorial structure underlying the responses. Binary outcomes of pairwise comparisons of items within blocks were analyzed using tetrachoric correlations. The standard dummy coding of forced-choice items is described by Brown and Maydeu-Olivares (2012) and involves, in our case, creating six pairwise comparisons per block: [A, B], [A, C], [A, D], [B, C], [B, D], and [C, D].¹ Each pair was coded as 1 when the first item was preferred to the second, and 0 otherwise. For instance, if in an item block a participant ranked A = 2, B = 1, C = 3, D = 4, the corresponding dummy coding were [A, B] = 0, [A, C] = 1, [A, D] = 1 [B, C] = 1, [B, D] = 1, and [C, D] = 1. Thus, any rank ordering of four items was equivalently coded as a set of six binary outcome variables, each representing a contrast between two items measuring four traits.

Scree plots were used to assess the number of factors. To explore the patterns of factor loadings, a target rotation was used whereby the target was set to the hypothesized structure, in which each item was meant to load on the trait it was designed to measure and had 0 loadings on other traits (Browne, 2001).

Confirmatory factor analysis

Thurstonian IRT modelling (Brown & Maydeu-Olivares, 2011) is an approach to analyze forced-choice data whereby binary outcomes of comparisons between all items involved in a forced-choice block are linked to a set of traits measured by the test. The model is well suited to analyze forced-choice questionnaires compiled of ranking blocks of any size (e.g., pairs, triplets, quads). Sections below give a short account of the Thurstonian IRT model features relevant to the forced-choice format used in the ECHO Listening Profile, including the estimation of item parameters and person scores and their standard errors.

Estimation of item parameters

To estimate item parameters, as well as correlations between latent traits that the questionnaire measures, a confirmatory factor model that incorporates relations between the traits and the binary outcomes of comparisons, with all necessary constraints, was tested. For technical details on the identification and constraints imposed by this model, see Brown and Maydeu-Olivares (2011, 2012).

Estimation of person parameters

To estimate person parameters (i.e., trait scores for respondents), a combination of trait scores is found that maximizes the likelihood of each observed response pattern. The assumed multivariate normal distribution of trait scores is also taken into account to maximize the available information (using Bayesian posterior approach). The Maximum a Posteriori (MAP) estimator was used, which maximizes the mode of the posterior distribution of the likelihood function, using the multivariate normal prior (Brown & Maydeu-Olivares, 2011).

Error of measurement and reliability

The advantage of using IRT methods for trait score estimation is that the standard error of measurement (SEM) can be estimated for every respondent's trait score (and is conditional on other trait scores of the respondent). While the availability of SEs for the estimated trait scores of each person is an advantage for individual diagnostics, it is also of interest to summarize the SEs for a range of trait values. The empirical reliability index is a sample-based summary of scale score precision, computed as the ratio of true score variance to the sum of true and error variance estimated in a sample.²

Results and discussion

Exploratory factor analysis

All items and blocks were included for EFA, resulting in 256 binary variables for analysis (43 blocks * 6 binary outcomes of pairwise comparisons). The scree plot (see Figure 2) suggested a strong factorial structure, with four major factors and potentially

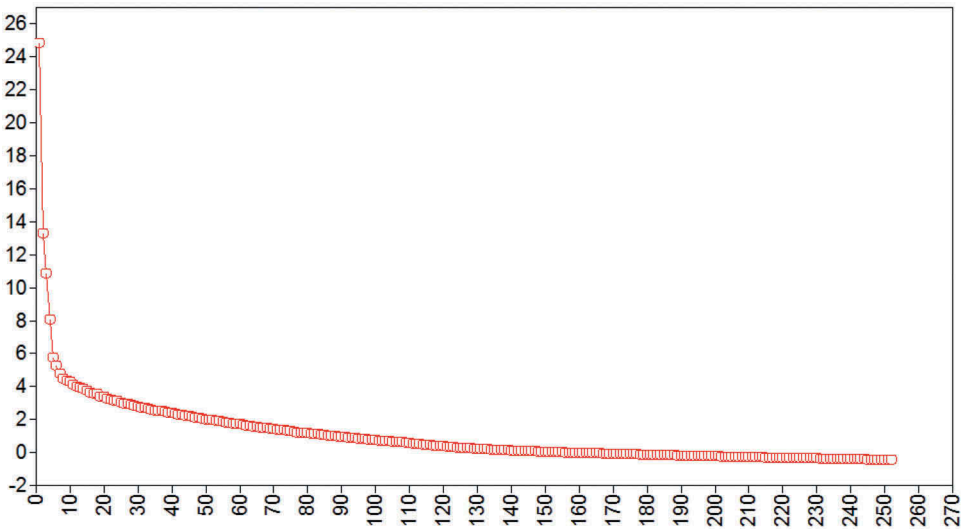


FIGURE 2 Scree plot for the tetrachoric correlation matrix of pairwise comparisons, Study 1.

² For Bayesian MAP scores, which are regressed-to-median estimates of latent traits, the formula is:

$$\hat{\rho} = \frac{\text{var}(\hat{\eta}_{MAP})}{\text{var}(\hat{\eta}_{MAP}) + \overline{SE^2}(\hat{\eta}_{MAP})}$$

TABLE 1
Configural Model Emerging from EFA with Target Rotation of 43-Item Blocks

<i>Block</i>	<i>Stem</i>	<i>Option A</i>	<i>Option B</i>	<i>Option C</i>	<i>Option D</i>
1	If I had to describe how I listen, I'd say I'm Primarily	CV		AL	CL
2	I like to be thought of as	CV	RV	AL	CL
3	I'm more of a	CV	CL	AL	
4	When I'm participating in a meeting that I'm not running, I find the most satisfaction	CV		AL	CL
5	When someone says something I perceive as inaccurate, I'm most likely to		AL	RV, AL	
6	When hearing new information, I primarily want to know	CV		AL	CL
7	People think of me as	CV		AL	CL
8	People come to me when	CV		AL	CL
9	People come to me when				
10	When I am amongst a group that is listening to a presenter, my primary concern is usually	CV		AL	CL
11	When listening to someone onstage	CV, RV			CL
12	When bored or uncomfortable in a meeting run by a superior, I'm most likely to			AL, CL	
13	In meetings, I most enjoy being able to offer	CV		AL	CL
14	I'm most likely to make decisions based on	CV		AL	CL
15	When the team is in a brainstorming session, I'm good at	CV			CL
16	In general, what I think about regular meetings is:		RV		CL
17	In meetings that involve newcomers	CV	RV	RV	
18	Which of the following best describes what you think about "showing" your listening?		RV	RV	CL
19	I tend to listen for	CV	RV	AL	
20	If I overhear a heated conversation between two co-workers, I'd most be inclined to interject if	RV(-)			
21	In my opinion, the ideal team is	CV	RV	AL, RV	CL
22	When a team that I'm part of experiences a disappointing setback, my first instinct is to	CV			
23	When I think about times I got myself into a difficult situation, it was usually because		RV	RV	
24	People value my ability to	CV		AL	CL
25	I'm most often misperceived as	CV	CV(-)		
26	In a pinch, I trust that	CV		AL	CL
27	Rank the following statements in order of how true they are for you				
28	I'm most likely to interrupt a speaker when			AL	
29	I prefer to listen for	CV		AL	CL
30	When I listen I try to	CV		AL	CL
31	When someone is speaking to me and I'm pressed for time, I'm most likely to think:		RV	RV	CL

(Continued)

TABLE 1
(Continued)

<i>Block</i>	<i>Stem</i>	<i>Option A</i>	<i>Option B</i>	<i>Option C</i>	<i>Option D</i>
32	Speakers who frustrate me the most				
33	I most enjoy speakers who	CV		AL	CL
34	I put a lot of trust in people who	CV		AL	CL
35	If I need to make a quick decision, I'll	CV		AL	RV, CL
36	When I get to the office, the first thing I do is	CV			
37	If a co-worker interrupts me while I'm working,	CV	RV		
38	If a co-worker cuts me off or talks over me	RV			
39	I learn best when			AL	
40	I have the most trouble listening to	CV			
41	If I were a character in a movie, I'd most likely be	CV	RV		
42	Teams I've worked with value my ability to	CV			CL
43	In meetings, I use questions to			AL	

Notes. Only salient loadings forming consistent patterns in EFA of pairwise outcomes are included. CV = Connective; RV = Reflective; AL = Analytical; CL = Conceptual. Symbol (-) signifies that the item indicates the negative end of the trait (counter-indicative item). Although randomized within block, choice A was written to reflect CV, choice B = RV, choice C = AL, and choice D = CL.

two or three further minor factors. The fact that the actual number of major factors in the data is equal to the hypothesized number is reassuring and allows us to proceed with rotating the 4-factor solution to the hypothesized target. To ease interpretation, Table 1 presents factor loading patterns summarizing item-level (rather than pairwise comparison level) loadings. Even though the configural model is only approximate at this stage because equality of factor loadings across three pairs cannot be imposed in EFA, it is useful for initial evaluation of correspondence between the data and the hypothesized model.

From these data, several observations can be made. First, both Connective Listening (CV) and Conceptual Listening (CL) are well represented by their items (most items load

³ For CV, unexpected loadings include (a) items written to measure other traits but loading on CV; for example, item "I'm most often misperceived as ... insensitive to others' needs" (block 25, option B) written to indicate Reflective Listening (RV) actually indicates the low end of CL; or (b) items written to measure CL but loading on other traits, for example item "If a co-worker cuts me off or talks over me I will tend to feel disrespected or slightly hurt, even if I don't show it" (block 38, option A) written for CL but actually indicating RV (which may not be surprising with the focus on self rather than others in this statement). For CL, unexpected loadings included (a) items written to measure other traits but loading on CL; for example, item "If I need to make a quick decision I'll ... usually make it based on what I've experienced to work in the past" (block 35, option B) written for RV but indicating CL; or (b) items written to measure CL but loading on other traits; for example item "When bored or uncomfortable in a meeting run by a superior, I'm most likely to ... fidget and start thinking about other things (block 12, option D) written for CL but actually indicating AL.

⁴ Examples include: "People think of me as.... a deep listener" (block 7 option B), which appears to be a better measure of Analytical than Reflective Listening; and "People come to me when they can benefit from my area of expertise" (block 8 option B), which emphasizes others benefitting, not the subject benefitting as the Reflective style definition would suggest. In addition, some items designed to measure RV actually appear to indicate Analytical

as hypothesized), with only a few unexpected or zero loadings.³ Second, Reflective Listening (RV) is weakly defined by its indicators, with many zero loadings. Analyzing the item content suggests that the likely reason is extrapolating beyond the domain by including items that are not direct indicators of the intended style, or are too ambiguous to be interpreted in the intended way.⁴ Third, Analytical Listening (AL) is relatively well represented with many items fitting with the definition and loading saliently; however, a significant number of items designed to measure AL are too similar in meaning to items designed to measure RV.⁵ Finally, some blocks in the questionnaire perform much better than others. Specifically, there are blocks that failed to produce any salient loadings where expected or produced only one or two out of the expected four.⁶

Confirmatory factor analysis

A Thurstonian IRT model with four freely correlated latent traits and the hypothesized factor loading patterns was tested with the appropriately coded responses to all 43 blocks. The full model converged and yielded an acceptable fit to the data ($SRMR = .080$). None of the thresholds of pairwise comparisons had extreme values (this follows from the relatively even distributions of preferences for the four options in the sample).

The standardized factor loadings of items on the four listening habits are reported in Table 2. For ease of interpretation, the utility of each item (first-order factors in the Thurstonian factor model) is scaled to have variance 1, so the items can be considered without reference to the pairwise comparisons. The factor loading parameters corroborate the EFA results in general; for example, weaker performance of RV and presence of blocks that do not contribute to measurement.

Item elimination and revision

Based on the item parameters estimated from the 43-item blocks, 24 blocks were retained. In these blocks, at least three items showed the potential to provide information on their traits. Considering that RV showed the weakest performance in previous analyses, the priority was given to blocks that measured that trait best.

The SRMR for the CFA using these 24-item blocks is .075, which indicates close fit. The empirical reliability estimates reported in Table 3 are above 0.8 for all the traits except RV, for which the reliability is still acceptable at .757. Overall, this can be considered adequate measurement precision for a short form.

The far right-hand column of Table 2 shows standardized factor loadings for items included in the short-form CFA. Once the weakest items from RV have been removed, the remaining items yielded a much more coherent construct, with the overall magnitude of factor loadings

Listening (AL). For example, block 5 option B “When someone says something I perceive as inaccurate, I’m most likely to.... stop them and ask for clarification”, which is designed to indicate RV, appears to fit better with AL.

⁵For example, in block 31, “When someone is speaking to me and I’m pressed for time, I’m most likely to think...”, both option B “..This person is impinging on my time” and option C “.... Could this person please get to the point?” are very similar in meaning and do not differentiate well between the two styles.

⁶For example, block 27 designed to indicate low ends of all traits, failed to produce any salient loadings. Other blocks, such as 22 or 23, produced loadings on only one factor out of four. These blocks provide very little information on the measured traits, and instead introduce noise in the model.

TABLE 2
Standardized Factor Loadings ECHO Listening Profile Items, Study 1

<i>Item #</i>	<i>Item text</i>	<i>Standardized factor loading</i>	
Connective (CV)		43 item-blocks	24 item-blocks
B8A	they need a supportive conversation partner (29)	0.67	.74
B2A	having others' interests at heart (6)	0.65	.77
B3A	people-person (9)	0.62	.61
B7A	a supportive listener (25)	0.62	.60
B42A	encourage teamwork and collaboration (165)	0.62	
B15A	making people feel welcome to share ideas (57)	0.61	.61
B19A	others' needs before my own (73)	0.51	.58
B26A	I can make sure everyone has what they need (101)	0.50	.57
B13A	my ability to foster harmony/collaboration (49)	0.50	.60
B29A	opportunities to connect personally (113)	0.47	.55
B22A	try and support the team and shore up morale (85)	0.46	.51
B35A	usually make it based on what would best meet the needs of everyone involved (137)	0.46	.50
B30A	provide support and show empathy (117)	0.45	.51
B41A	the good friend (161)	0.45	
B14A	weighing the needs of everyone affected (53)	0.44	.52
B17A	I look for ways to break the ice and make people feel comfortable (65)	0.40	.38
B6A	how the information will affect the rest of the team (21)	0.39	.41
B36A	check in with people and see how they're doing (141)	0.39	
B4A	when there's a sense of mutual collaboration (15)	0.38	.51
B1A	relationally-driven (1)	0.36	.46
B24A	consider how information may affect the rest of the team (93)	0.36	.41
B25A	too soft (97)	0.35	
B32A	seem impersonal and disconnected from the audience (125)	0.31	
B34A	I care about (133)	0.30	.38
B37A	I welcome the interruption if they need my help in any way (145)	0.29	
B33A	tell stories that relate to shared experiences (129)	0.29	.36
B21A	one in which all members are mutually respected and appreciated (81)	0.28	.33
B10A	to show the speaker support through attentiveness and body language (37)	0.27	.27

B11A	I am likely to sit somewhere that enables me to signal to the speaker that they are being heard (41)	0.21	
B23A	I was trying to be too many things to too many people (89)	0.21	
B20A	I know a way to de-escalate the dispute (77)	0.21	
B31A	I have to go, but I don't want to interrupt this person, either (121)	0.20	
B18A	Eye-contact and body language are the best ways to show I'm listening (69)	0.16	
B16A	They are important for team cohesion, if nothing else (61)	0.15	
B12A	look around to see who else is bored (45)	0.14	
B5A	let it go unless doing so would harm that person or others (17)	0.13	
B28A	the speaker seems to be floundering and I want to help (109)	0.12	
B39A	the instructor is engaging and inspiring irrespective of the subject matter (153)	0.10	.13
B40A	aggressive people (157)	0.09	
B43A	get clarity on what I and others are wondering (169)	0.09	.14
B27A	Although others' needs are important, I often don't think about them first (105)	0.06	
B25A*	insensitive to others' needs (98)	-0.59	
Reflective (RV)			
B4B	when the information discussed will help me get my job done (14)	0.51	.57
B38B	I will likely continue my train of thought internally (150)	0.47	
B2B	an expert (5)	0.46	.32
B21B	one in which everyone sticks to their area of expertise (82)	0.41	.40
B16B	We have too many meetings and they need to be less frequent (62)	0.39	
B30B	understand how the information relates to me (118)	0.39	.60
B22B	check what role my actions may or may not have played in the setback (86)	0.37	.46
B11B	I don't care where I sit, but I'll assess the information against my own knowledge and previous experience (42)	0.34	
B14B	what I already know (54)	0.34	.53
B39B	the content and information is clearly relevant to me (154)	0.34	.55
B31B	This person is impinging on my time (122)	0.33	
B37B	I prefer to finish what I'm doing before finding out what they need (146)	0.33	
B29B	how the information relates to me and my situation (114)	0.32	.63
B32B	seem to not be respecting my time (126)	0.32	

(Continued)

TABLE 2
(Continued)

Item #	Connective (CV)	Item text	Standardized factor loading	
			43 item-blocks	24 item-blocks
B13B		my knowledge and experience (50)	0.32	.31
B5B		stop them and ask for clarification (18)	0.30	
B33B		speak to my current goals and interests (130)	0.29	.36
B35B		usually make it based on what I've experienced to work in the past (138)	0.28	.35
B17B		I like to quickly "figure out" how these additional people affect where I stand (66)	0.27	.39
B19B		my own experience before others (74)	0.26	.47
B38B*		I will tend to feel disrespected or slightly hurt, even if I don't show it (149)	0.25	
B8B		they can benefit from my area of expertise (30)	0.24	.24
B43B		understand what I need to know (170)	0.24	.35
B36B		prefer time alone to get my thoughts in order (142)	0.22	
B34B		have proven themselves to me in the past (134)	0.21	.22
B6B		how it will affect my goals and timelines (22)	0.20	.44
B42B		offer knowledge and experience others don't have (166)	0.19	
B28B		the speaker is not getting to the point (110)	0.19	.17
B1B		purpose-driven (2)	0.17	
B26B		I can fall back on what I already know from experience (102)	0.16	.28
B12B		sit back and cross my arms (46)	0.13	
B15B		identifying which will work based on what I've come to know through experience (58)	0.12	.25
B18B		Being still and attentive is the best way to show I'm listening (70)	0.09	
B10B		whether the speaker will speak to my interests and help me deepen my own knowledge in a subject (38)	0.07	.24
B40B		superficial people (158)	0.04	
B41B		the main character (162)	0.02	
B24B		bring my perspective to the table (94)	0.00	-.04
B7B		a deep listener (26)	-0.01	.00
B20B		they specifically ask me to (78)	-0.04	
B23B		I didn't consider well enough what other people were needing (90)	-0.09	

B27B	Although my own perspective is important, I often don't think about it first (106)	0.33	
B3B	doer (10)	−0.34	.26
<i>Analytical (AL)</i>			
B14C	what the hard data points to (55)	0.79	.80
B13C	facts & clarity (51)	0.69	.65
B30C	scan what is being said for accuracy (119)	0.65	.66
B22C	go back to the numbers or data for an objective look into what happened (87)	0.64	.61
B4C	when we start getting to the truth or core of an issue (16)	0.64	.53
B19C	factual accuracy regardless of who is speaking (75)	0.62	.67
B34C	aren't swayed by others, but stick to the facts and get things right (135)	0.57	.56
B21C	one in which everyone sticks to facts and respects established methods (83)	0.56	.49
B29C	facts and data (115)	0.55	.62
B10C	whether the speaker's claims are provable or supported by facts (39)	0.54	.59
B1C	fact-driven (3)	0.54	.54
B33C	speak from the evidence of the situation (131)	0.50	.51
B39C	the content and information is clearly presented and accurately sourced (155)	0.49	.52
B7C	a critical listener (27)	0.48	
B16C	I prefer them to be well structured so they don't wander off topic (63)	0.47	.45
B31C	Could this person please get to the point? (123)	0.44	
B2C	someone who can stick to the truth, no matter the consequences (8)	0.41	.33
B24C	stick to the facts without bias toward the speaker or emotions (95)	0.40	.43
B35C	usually make sure to analyze the relevant data first (139)	0.40	.42
B26C	the facts of the situation will provide the path forward (103)	0.38	.43
B6C	first that it's accurate before I take it seriously (23)	0.38	.44
B8C	they want accurate feedback (31)	0.37	.32
B17C	it's best to stick to the agenda and not get too distracted (67)	0.36	.31
B3C	truth-teller (11)	0.36	.35
B5C	stop them and point out facts to correct the mistake (19)	0.33	
B28C	the speaker does not know what he/she is talking about (111)	0.32	
B43C	clarify the facts regarding the speaker's statements (171)	0.31	.31
B20C	they seem to be operating on false information (79)	0.31	
B25C	too stubborn (99)	0.31	
B40C	people who use fuzzy thinking (159)	0.30	
B41C	the detective (163)	0.25	

(Continued)

TABLE 2
(Continued)

Item #	Item text	Standardized factor loading	
Connective (CV)		43 item-blocks	24 item-blocks
B37C	I will stop and listen if they are very clear about what they need and why (147)	0.24	
B32C	seem to overgeneralize (127)	0.23	
B42C	detect a potential problem on the horizon and take steps to avoid it (167)	0.23	
B15C	sifting through ideas and vetting them through some factual framework (59)	0.23	.22
B18C	I don't think about how I'm showing my listening; I just focus (71)	0.19	
B36C	get straight down to my tasks (143)	0.16	
B38C	it's just something that happened; I don't think much about it (151)	0.13	
B23C	I was being too literal-minded (91)	0.05	
B11C	I try to sit somewhere that I won't be distracted so that I can focus on the facts of the presentation (43)	0.03	
B12C	start asking questions in an attempt to get things on track (47)	−0.08	
B27C	Although data are important, I often don't think about them first (107)	0.18	
Conceptual (CL)			
B24D	bring fresh ideas to the table (96)	0.71	.75
B1D	idea-driven (4)	0.65	.69
B13D	fresh ideas (52)	0.63	.66
B4D	when creative inspiration unfolds throughout the group (13)	0.62	.70
B8D	they need help brainstorming new or better ideas (32)	0.60	.63
B2D	a creative or thought-provoking person (7)	0.57	.68
B7D	a creative listener (28)	0.57	.62
B15D	offering a lot of new ideas (60)	0.56	.55
B29D	ideas (116)	0.55	.52
B33D	open my mind to new ideas (132)	0.54	.54
B26D	I will have good ideas to move forward (104)	0.54	.54
B11D	no matter where I sit, I end up generating new ideas through the course of the presentation (44)	0.51	
B34D	are open to new ideas and think outside the box (136)	0.40	.43
B42D	envisions possibilities others don't see (168)	0.37	
B6D	how it may bring new options or possibilities to light (24)	0.35	.31
B10D	whether the presentation will help stimulate new ideas (40)	0.33	.26
B23D	I was pursuing too many ideas and not focusing enough (92)	0.29	

B40D	dry, unimaginative people (160)	0.28	
B35D	usually choose the best idea that comes to me (140)	0.28	.30
B14D	the overall vision we're working toward (56)	0.28	.26
B21D	one that makes time for open-ended exploration of different ideas (84)	0.25	.32
B18D	Asking thought-provoking questions is the best way to show I'm listening (72)	0.24	
B28D	I have an idea that seems relevant (112)	0.24	
B20D	I know I have good ideas to contribute (80)	0.20	
B19D	interesting ideas regardless of who is speaking (76)	0.19	.12
B25D	too scattered (100)	0.17	
B16D	They allow important time to be able to "think out loud" and explore issues (64)	0.17	
B31D	My next commitment can wait if this topic is interesting (124)	0.16	
B30D	appreciate the speaker's ideas (120)	0.14	.13
B41D	the philosopher (164)	0.12	
B43D	learn more about the subject (172)	0.12	.12
B5D	let it go if I get the overall idea they're trying to communicate (20)	0.08	
B22D	remember that setbacks almost always turn into great opportunities to explore what else is possible (88)	0.08	.12
B38D	it's probably because they had an important thought they needed to share (152)	0.05	
B17D	we have a great opportunity to add new perspectives to the conversation (68)	0.02	-.01
B37D	I don't mind because I can quickly switch thinking modes and come back to what I was doing (148)	-0.05	
B12D	fidget and start thinking about other things (48)	-0.06	
B32D	seem too hung-up on the details (128)	-0.07	
B39D	the subject matter is engaging and inspiring irrespective of the speaker (156)	-0.07	-.09
B36D	prefer some unstructured time before getting to business (144)	-0.11	
B3D	idea-person (12)	-0.36	.65
B27D	Although ideas are important, I often don't think about them first (108)	0.36	

Notes: The marker item for each scale is set in **boldface**. Red font flags items with low factor loadings (here, loadings below 0.25 are flagged corresponding to just over 5% of variance due to common factor). Green font flags item with unexpected direction of loading; including block 27, which was designed as negatively keyed.

TABLE 3
Calculation of Empirical Reliabilities of the MAP Scores in the Short Form (24 Blocks)

<i>Scale</i>	<i>MAP score variance</i>	<i>Mean SE²</i>	<i>Reliability</i>
<i>Study 1</i>			
Connective	1.005	.158	.864
Reflective	.869	.278	.757
Analytical	.974	.177	.846
Conceptual	.932	.191	.830
<i>Study 2</i>			
Connective	.803	.261	.755
Reflective	.832	.253	.767
Analytical	.871	.205	.810
Conceptual	.801	.258	.756

TABLE 4
Correlations between Latent Traits Measured by the Short Form (24 Blocks, Study 1) and Final ECHO (Study 2), Final ECHO with LSP-R

	CV	RV	AL	CL
CV = Connective	—	-.30	-.29	-.09
RV = Reflective	-.02	—	.44	-.26
AL = Analytical	-.34	.41	—	-.18
CL = Conceptual	.23	-.13	-.30	—
LSP-Relational	.48	-.31	-.36	.16
LSP-Analytical	.11	-.31	.10	.06
LSP-Task-Oriented	-.31	.32	.18	-.17
LSP-Critical	-.33	.11	.34	-.11

Notes: For correlations between ECHO habits (upper portion of table), coefficients below the diagonal come from Study 1, while those above the diagonal come from Study 2. Correlations between ECHO habits and LSP-R styles (lower portion of table) are from Study 2. Those shaded in gray were predicted from our understanding of conceptual overlap.

becoming greater. The marker item for RV when using these 24 blocks is “how the information relates to me and my situation (114),” with the standardized loading 0.63. This item reflects well the intended meaning of the construct, which suggests that the short-form model provides a better basis for measurement of the listening habits than the 172-item model. Other traits also appear to be captured well with marker items indicated in bold face. Each marker item corresponds well to the definition of its respective listening habit.

The estimated correlations between the four latent traits are given in Table 4. These are the estimated correlations between the true scores in the population and are unaffected by the error of measurement. That is, these values do not need any corrections for attenuation. Examination of the correlations also confirms the construct validity of the model. For instance, RV and AL correlate moderately and positively. AL correlates moderately negatively with both CV and CL, which is perhaps to be expected given the critical approach of AL as opposed to the more forgiving (CV) and exploratory (CL).

STUDY 2: CREATING A FINAL ASSESSMENT

Study 2 was conducted to further refine the ECHO Listening Profile. To do so, we studied the factor loadings in Table 2 and took into consideration the identified marker items. We then rewrote items within the 24 blocks identified as a possible short form in Study 1, though we noticed that 10 item blocks were particularly strong. For these 10 blocks, all items for CV and AL adequately loaded; seven RV items and 8 CL items also conformed. Within these 10 blocks were also the marker items for all listening habits (see Table 2). In the other 14 blocks, only one or two original items fully conformed. Thus, in our confirmatory analysis reported below, we first tested these 10 blocks of items as the final ECHO Listening Profile. From Table 1, those item blocks are 2, 4, 6, 10, 13, 14, 19, 24, 29, and 30.

In addition, we sought evidence of discriminant validity by simultaneously administering the only other known measure of listening habits, the Listening Styles Profile-Revised (Bodie, Worthington, & Gearhart, 2013). Although we expect some conceptual overlap, the ECHO should not simply replicate the orientations measured by the LSP-R; rather, we expect theoretically relevant but moderately sized correlations between the two instruments.

The LSP-R was designed to measure four “goals that listeners have when engaged in situations that call them to be a particular kind of listener” (Bodie et al., 2013, p. 86). The first goal, Relational listening (RLSP), is a concern with and awareness of others’ feelings and emotions. As such, we expect RLSP to be positively associated with Connective Listening and negatively related to both Reflective and Analytical Listening. The second goal, Analytical Listening (ALSP), reflects an intentional focus on the full message of a speaker prior to forming a judgment. Like the analytical listening of the ECHO, ALSP reflects a tendency to listen closely in order to carefully form an opinion. Similarly, Critical Listening (CLSP), the third goal measured by the LSP-R, is a tendency to evaluate and critically assess messages for accuracy and consistency. As such, we expect both ALSP and CLSP to be positively correlated with ECHO’s Analytical Listening factor. Finally, Task-Oriented Listening (TLSP) refers to a concern with the amount of time spent listening as well as a desire to interact with focused speakers. Such a rushed form of listening is antithetical to the Connective and Conceptual habits, but likely positively related to ECHO’s Analytical and Reflective styles.

Methods

Participants

A total of 1,180 members of Amazon’s Mechanical Turk were recruited during the month of August, 2018. All participants were high school graduates in the United States. Participants were offered US \$1.80 in return for their participation.

Procedures

Participants were first directed to a secure URL that described the purpose of the study and provided an opportunity to give informed consent. All procedures were approved by the Institutional Review Board at The University of Mississippi. A total of 24 blocks of ECHO items were presented in random order, and answer choices were presented in a random order

within each block. Similar to Study 1, mixed with these item blocks were two attention checks prompted with “To show you are paying attention, please place these answer choices in alphabetical order” and followed by four items. Participants also completed a shortened version of the LSP-R after they completed the ECHO items. Embedded within the LSP-R was an additional attention check (“If you are paying attention somewhat agree with this statement.”). The 205 participants who failed one of the attention checks were eliminated from the dataset, resulting in 975 usable surveys.

LSP-R

Twelve items that comprise the LSP-R were chosen based on factor-loadings of past studies (Bodie & Worthington, 2018). Each factor - relational (e.g., “When listening to others, I focus on understanding the feelings behind words”), analytical (e.g., “When listening to others, I consider all sides of the issue before responding”), critical (e.g., “I have a talent for catching inconsistencies in what a speaker says”), and task-oriented (e.g., “When listening to others, I become impatient when they appear to be wasting time”) – was represented by three items, and all items were scaled along 7 points bounded by “strongly agree” and “strongly disagree.” The confirmatory model was tested using the lavaan package in R (Rosseel, 2012), and estimates of reliability were generated using semTools (Jorgensen, Pornprasertmanit, Schoemann, & Rosseel, 2018). Data conformed to the predicted model quite well, $CFI = .95$, $TLI = .94$, $RMSEA = .06$ ($90\%CI = .05, .01$), $SRMR = .04$, $\chi^2(48) = 229.24$, $p < .001$. Reliability estimates for all four scales were also adequate: Relational, $\omega = .81$, Analytical, $\omega = .75$, Task-Oriented, $\omega = .80$, Critical $\omega = .80$.

Results and discussion

Confirmatory factor analysis of the ECHO Listening Profile

A Thurstonian item response model was fitted to tetrachoric correlations of the dummy-coded binary outcomes (e.g., AB, BC). The fit for the hypothesized measurement model was as follows: $CFI = .95$, $TLI = .95$, $RMSEA = .02$ ($90\%CI = .02, .023$), $SRMR = .059$, $\chi^2(48) = 229.24$, $p < .001$. Table 5 presents the standardized factor loadings for the forced-choice latent utilities, and estimates of reliability are presented in Table 3. Table 4 presents correlations between latent variables, which closely mirror those found in Study 1. Two differences are notable, both related to Connective Listening. While CV was unrelated to RV in Study 1, data from this study produced a negative association. Similarly, while CV was positively related to CL in Study 1, these constructs were slightly negatively related (statistically significant but small) in this study.

Correlations between ECHO and LSP-R

Table 4 reports zero-order correlations between the four ECHO listening habits and the four LSP-R style variables. The cells shaded in gray represent the predictions we made based on our understanding of the conceptual overlap between the ECHO habits and LSP-R styles. In general, these data provide evidence for convergent and discriminant validity. Although the

TABLE 5
Standardized Factor Loadings ECHO Listening Profile Items, Study 2 (10 Blocks, 40 Total Items)

<i>Block #</i>	CV	RV	AL	CL
2	.85	.47	.49	.57
4	.40	.66	.57	.62
6	.45	.56	.58	.48
10	.38	.68	.72	.48
13	.65	.42	.76	.77
14	.51	.51	.74	.14
19	.62	.56	.80	.49
24	.41	.16	.54	.76
29	.49	.67	.74	.54
30	.68	.70	.76	.38

Notes: Block numbers refer to those presented in Table 1. Prompts remained stable across studies, even if answer choices were edited to better reflect conceptual definitions of habits.

two scales share some conceptual space, they are not merely duplicates. First, no correlation was above .50, suggesting no ECHO habit overlaps more than 25% with any of the LSP-R constructs. Second, patterns of correlations were largely in line with predictions. Connective Listening (CV) was positively related with Relational Listening (RLSP) and negatively related with Task-Oriented (TLSP) and Critical Listening (CLSP). Reflective Listening (RV) was negatively associated with RLSP and Analytical (LSP) Listening and positively associated with TLSP. Analytical Listening was negatively associated with RLSP and positively with CLSP. And, Conceptual Listening (CL) showed small negative relationships with TLSP and CLSP and a small positive relationship with RLSP. This latter correlation was not predicted. Two predicted associations, between (1) AL and ALSP and (2) CL and CLSP were quite small even if they were in the right direction and statistically significant. Indeed, the only coefficient not to reach a conventional level of significance was between CL and ALSP. Finally, one correlation was moderately strong but not predicted, between RV and ALSP. The negative association between RV and ALSP seems to reflect RV's internal focus as the items that comprise ALSP are about "the other." As we turn attention to a discussion of these findings, we will note how associations between these two measures help us better understand the nature of listening habits.

GENERAL DISCUSSION

The purpose of this article was to introduce a typology of listening habits and derive a measure suitable for their measurement. In two studies, we were able to empirically settle on a 40-item scale (10 blocks of 4 items) that assesses four primary listening habits – Connective Listening, Reflective Listening, Analytical Listening, and Conceptual Listening which represent how people come to understand the content and relational meaning of messages. In what follows, we discuss the implications of these two studies and their limitations.

Conceptualizing listening habits

This project was born out of the recognition that misunderstandings are an inevitable part of human communication. Although multiply determined, how people understand what others mean is driven at least partially by habitual patterns of listening behavior. As listeners process others' speech, they not only attend to the words used but also to their idiosyncratic understandings of the social context and to the relationship they see reflected therein. In the language of Watzlawick et al. (1967), when misunderstanding occurs, it is either because of a mishearing of the content of the message (e.g., I heard you say "left" when you said "right") or a misinterpretation of the relational level of meaning (e.g., I interpreted your message as condemning when you meant it as praise). Using the ECHO Listening Profile, individuals can better understand how they tend to process information, and organizations can better predict when work teams are likely to have issues related to misunderstanding (e.g., documenting a work team that is composed mainly of Connective Listeners with a single Analytical Listener can help diagnose the frustrations from the latter with respect to how the former tend to pay primary attention to others' feelings and emotions while largely ignoring facts and "hard data").

The ECHO Listening Profile situates four listening habits along two continua, with each dimension representing a central aspect of meaning underlying all messages. The first dimension captures variability in how closely listeners attend to content-level details shared by speakers (Analytical Listening; AL) compared to ideations surrounding the possibilities implied in speech (Conceptual Listening; CL). The second dimension captures variability in how closely listeners filter information through what it means for others (Connective Listening; CV) compared to how it relates to one's own perspective and past experience (Reflective Listening; RV). Of course, these four habits represent a logical spectrum of listening habits, derived from a well-known theoretical framework. We are not arguing that people are one type or another (e.g., "a Connective Listener"), but rather that all people hold some level of each of these filters in their cognitive system even if these filters are more prominent in some people in some contexts, compared to others. Indeed, the typology of listening habits specified by ECHO can help explain how individuals can listen to the same piece of information but walk away with different interpretations. Ultimately, then, what we offer in this article is an explanation for why misunderstanding occurs: because of the notoriously idiosyncratic nature of our listening filters, each person not only hears differently (i.e., processes different content) but ultimately evaluates and interprets differently (i.e., processes different relational meaning), resulting in different responses. Of course, the specific filters that become operative depends on yet unspecified situational constraints and activities, and we welcome future work that uncovers these characteristics. In addition, work is still needed to show that the scale is capable of predicting which types of misunderstandings are likely to occur given the types of information being communicated and the specific patterns of listening habits held by a group of listeners.

What we can say, however, based on the associations found in Study 2 (see Table 4), and in line with the conceptual definitions found in Figure 1, is that we found evidence of convergent and discriminant validity for the ECHO Listening Profile; that is, the ECHO factors correlated in expected ways with factors derived from the only other known measure of listening styles, the Listening Styles Profile-Revised (LSP-R; Bodie et al., 2013). First, individuals who score highly on AL will tend to notice and point out errors or inconsistencies in messages ($r = .34$ with LSP-R Critical); their heightened scrutiny of information

is also evident in small, positive associations with Task-Oriented Listening (need for speakers to be focused) and the Analytical dimension of the LSP-R (need to listen to multiple points-of-view). In addition, AL is less focused on listening for feelings or emotions underlying facts ($r = -.36$ with LSP-R Relational), something also reflected in the negative association between AL and CV ($r = -.34$, see Table 4). Second, individuals who score highly on CL report slightly more patience (or at least less frustration) with unorganized speakers ($r = -.17$, LSP-R Task-Oriented), less likely to point out errors or inconsistencies (Critical LSP-R), and report a slight tendency to focus on feelings and emotions (Relational LSP-R). Third, those who score highly on CV show a clear preference for listening to feelings and emotion (a sign of criterion-oriented validity) in a nontask-oriented and uncritical manner (showing a clear preference for others' points of view). Finally, and showing the opposite pattern of associations with the LSP-R, RV is positively associated with task-oriented listening (maybe because they prefer not to waste time) and negatively with both relational and the analytical factor of the LSP-R (perhaps because they tend inward, mainly reflecting on their own past experiences).

Before moving on to the implications for measuring listening, we want to point out that the characteristics of the four listening habits measured by the ECHO include both potential strengths and likely challenges. Indeed, the ECHO Listening Profile should not be used as a measure of "good" or "bad" listening but is meant to illustrate that we all listen with particular biases, oftentimes unknown to us but evident in how we interact with others. As work on message interpretation has found, "communicators understand messages differently, perhaps even when they are listening equally well. Individuals might even recall a message the same way but hold different meanings for it" (Edwards, 2011, p. 62; see also; Sumner & Kataoka, 2013).

Measuring listening habits

In addition to providing a theoretically grounded typology of listening habits and evidence that each sub-scale mapped onto but did not duplicate an existing measure of listening styles, this article also contributes to the literature by exploring alternative scaling options for self-reported aspects of listening. To date, several scales have been developed to tap individual differences in listening, and readers can find a thorough overview and critique of the most popular in Worthington and Bodie (2018). Although developed to tap different facets of listening, each of these scales uses some form of single-stimulus response format (i.e., assessing one item at a time), and is usually scaled using a Likert format (strongly agree – strongly disagree). However advantageous single-stimulus response modes might be in terms of efficiency or ease of statistical analysis, they pose problems, not the least of which is response bias. For example, participants can endorse all items indiscriminately (acquiescence bias), endorse items that allow a favorable impression (social desirability bias), or respond in the midpoint of the scale (central tendency responding). Likewise, rating scales open up the possibility of idiosyncratic interpretation of the rating scale (something that seems likely given how people interpret messages more generally).

In general, forced-choice questionnaires avoid these pitfalls by forcing participants to make a set of comparative judgments among items. In the case of ECHO, participants are required to make 10 such comparative judgments, each time among items reflecting each of the four listening habits. Because none of these habits is "better" or "more ideal" than any of the others,

social desirability concerns were paramount. By situating items within blocks, we were able to force participants to choose among several “desirable” or “undesirable” traits. For example, in one item block, participants must choose how they “like to be thought of” with options: (A) having others’ interests at heart, (B) an expert, (C) someone who can stick to the truth, no matter the consequences, and (D) a creative or thought-provoking person. One could argue that each of these is a positive descriptor; and, indeed, in using ECHO we often hear comments like “it was hard to choose; I could see the merit in all of those choices.” Rather than focus on “the merit” of items, participants are more easily reminded to choose the ordering that best represents their set of listening habits, usually within an organizational setting.

Limitations and directions for future research

Of course, ECHO is still a self-report measure of habituated listening behaviors. As such, we cannot fully claim to have eliminated response bias, particularly the tendency for respondents to answer items based on how they want to be rather than how they are. Perhaps no measure will meet this high standard. Nevertheless, by using a forced-choice format, ECHO does mitigate concerns offered about other listening assessments. Indeed, although some scales fare better than others, in general, assessing listening through self-report is plagued by common measurement concerns. Because our study did not formally assess individual items for social desirability, we cannot fully claim to have eliminated these concerns. We are somewhat comforted given inspection of the item prompts and answer choices, and we are certain that people cannot simply select all of the socially desirable answers as “most like me” (as evidenced by the example provided in the last paragraph). Nevertheless, future research should explicitly test these conjectures and add to the validity portfolio of ECHO.

A second limitation is the use of a shortened version of the LSP-R. Although the items were selected based on performance in past studies (highest loading items), and we found evidence of construct validity for this scale, testing these items along with alternatives will enable a more definitive answer to whether a short-form LSP-R can be created.

Finally, we recognize that validity is an ongoing process, and that our results are not universal or generalizable to all populations. Whether these habits span cross-culturally, and whether ECHO can be used in younger populations, for instance, are empirical questions in need of data to answer. Limitations and future research notwithstanding, ECHO holds promise for measuring the biases that creep into our listening, even when we are convinced that we have “truly heard” another person.

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