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Brief Articles

Which Individual Therapist Behaviors Elicit Client Change Talk and Sustain Talk in Motivational Interviewing?

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ABSTRACT

Objective: To identify individual therapist behaviors which elicit client change talk or sustain talk in motivational interviewing sessions.
Method: Motivational interviewing sessions from a single-session alcohol intervention delivered to college students were audio-taped, transcribed, and coded using the Motivational Interviewing Skill Code (MISC), a therapy process coding system. Participants included 92 college students and eight therapists who provided their treatment. The MISC was used to code 17 therapist behaviors related to the use of motivational interviewing, and client language reflecting movement toward behavior change (change talk), away from behavior change (sustain talk), or unrelated to the target behavior (follow/neutral).
Results: Client change talk was significantly *more* likely to immediately follow individual therapist behaviors [affirm ($p = .013$), open question ($p < .001$), simple reflection ($p < .001$), and complex reflection ($p < .001$)], but significantly *less* likely to immediately follow others (giving information ($p < .001$) and closed question ($p < .001$)]. Sustain talk was significantly *more* likely to follow therapist use of open questions ($p < .001$), simple reflections ($p < .001$), and complex reflections ($p < .001$), and significantly *less* likely to occur following therapist use of therapist affirm ($p = .012$), giving information ($p < .001$), and closed questions ($p < .001$).
Conclusions: Certain individual therapist behaviors within motivational interviewing can either elicit both client change talk and sustain talk or suppress both types of client language. Affirm was the only therapist behavior that both increased change talk and also reduced sustain talk.

1. Introduction

Motivational interviewing (MI) is a person-centered counseling style for addressing ambivalence about change and has had widespread evidence of efficacy, particularly in treating addictions (Miller & Rollnick, 2013). Over the past several years, attention has increasingly focused on identifying the mechanisms by which MI exerts its therapeutic effects, with particular focus on the role of client language about changing substance use behavior, either change talk or sustain talk. Miller and Rollnick define change talk as "any self-expressed language that is an argument for change" (2013, p. 159) and sustain talk as "the person's own arguments for *not* changing, for sustaining the status quo" (2013, p. 7). Research has demonstrated that change talk predicts improved outcomes (e.g., Walker, Stephens, Rowland, & Roffman, 2011) while sustain talk predicts poorer outcomes (e.g., Apodaca et al., 2014). A logical next step, of particular use to clinicians, is to identify therapist behaviors which are more likely to elicit change or sustain talk.

Linking therapist and client behavior is made possible by sequential analysis, a process that involves recording and coding clinician and client behavior as it unfolds sequentially in time across a session. Sequential probabilities are then calculated to determine if a specific transitional sequence is significantly different than that which would be expected to occur by chance. In the context of MI, researchers have clustered individual behavior (speech) codes into composite categories, including therapist MI-consistent (MICO; behaviors that are directly prescribed in motivational interviewing), therapist MI-inconsistent (MIIN; behaviors that are directly proscribed in motivational interviewing), and therapist other (behaviors that are considered neutral, i.e., neither prescribed nor proscribed in MI), as well as client change talk, sustain talk, and follow/neutral. See Table 1 for a full list of the individual language codes, along with a definition and examples.

Prior research has focused primarily on these composite categories (MICO, MIIN, other) rather than examining the individual therapist behaviors that comprise the categories. For example, Moyers and Martin (2006) reported that therapist MICO behavior was more likely to be

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Table 1
Therapist and client and behavior codes.

Code	Description	Example(s)
Therapist codes		
MI-consistent (MICO)		
Affirm	The therapist says something positive or complimentary to the client. It may be in the form of expressed appreciation, confidence or reinforcement.	"You're a very resourceful person."
Emphasize control	The therapist directly acknowledges, honors, or emphasizes the client's freedom of choice, autonomy, or personal responsibility.	"It is totally up to you whether you quit or cut down, or make no changes to your drinking."
Open question	The therapist asks a question that allows a wide range of possible answers. The question may seek information, invite the client's perspective, or encourage self-exploration.	"In what ways has drinking caused problems for you?"
Advise with permission	The therapist gives advice, makes a suggestion, or offers a solution or possible action, after first asking client permission to do so	"We could try brainstorming to come up with ideas about quitting if you like."
Raise concern with permission	After first asking permission to do so, the therapist points out a possible problem with a client's goal, plan, or intention, which contains language that marks it as the therapist's concern (rather than fact).	"Is it OK if I tell you a concern that I have about that? I wonder if it puts you in a situation where it might be easy to start drinking again."
Simple reflection	A reflective listening statement made by the therapist in response to a client statement, that serves to simply repeat or rephrase what the client has said.	"It's confusing to you why you need to be here."
Complex reflection	A reflective listening statement that adds substantial meaning or emphasis to what the client has said.	"On one hand you feel you need the relief that alcohol can provide, and at the same time you're having some real concerns about your health."
MI-inconsistent (MIIN)		
Advise without permission	The therapist gives advice, makes a suggestion, or offers a solution or possible action, without asking client permission to do so.	"You could ask your friends not to drink at your house."
Raise concern without permission	The therapist points out a possible problem with a client's goal, plan, or intention, without asking client permission to do so.	"I think you may wind up drinking again with your old friends."
Confront	The therapist directly disagrees, argues, corrects, shames, blames, seeks to persuade, criticizes, judges, labels, moralizes, ridicules, or questions the client's honesty.	"You knew you'd lose your license and you drove anyway."
Direct	The therapist gives an order, command, or direction.	"You've got to stop drinking."
Warn	The therapist provides a warning or threat, implying negative consequences unless the client takes a certain action.	"You're going to relapse if you don't get out of this relationship."
Other		
Facilitate	Simple utterances that function as acknowledgments to encourage the client to keep talking"	"Mm hmm…"
Giving information	The therapist gives information to the client, explains something, educates or provides feedback.	"You indicated during the assessment that you typically drink about 18 standard drinks per week. This places you in the 96thpercentile for men your age."
Closed question	A question that implies a short answer: Yes or no, a specific fact, a number, or multiple-choice format.	"How many drinks did you have that night?"
Support	These are generally sympathetic, compassionate, or understanding comments. They have the quality of agreeing or siding with the client.	"That must have been difficult."
Structure	To give information about what's going to happen in the course of the session or to make a transition from one part of a session to another.	"This is the part of the study where we'll meet for about 45 minutes to discuss your drinking."
Client codes		
Change talk	Client conveys personal ability, need, desire, or reason for change; a particular action taken that is clearly linked to change; or an intention to change.	"I can do it." "I just want to wake up sober in the morning." "I really can't afford to get another DWI." "I'll cut back on weekends."
Sustain talk	Client conveys lack of personal ability, need, desire, or reason for change; a particular action taken that is clearly linked to sustaining current behavior; or an intention not to change.	"I don't think I could change." "I don't think I need to cut down." "Drinking helps me to relax and meet people." "I ended up blacking out on Friday night."
Follow/Neutral	Client language that does not pertain to the target behavior change.	"How long will this appointment take?" "I ride my bike everywhere."

Note. Descriptions and examples of therapist and client codes come from the Manual for the Motivational Interviewing Skill Code (MISC), version 2.0. (Miller, Moyers, Ernst, & Amrhein, 2003). Available for download at: http://casaa.unm.edu/download/misc.pdf.

followed by client change talk, and less likely to be followed by client sustain talk only. Therapist MIIN behavior was more likely to be followed by client sustain talk. A subsequent study by Gaume, Gmel, Faouzi, and Daeppen (2008) found that therapist MIIN behavior was less likely to be followed by client change talk, while therapist MICO behavior was more likely to be followed by *both* change talk and sustain talk (interpreted by the authors as client change exploration).

Although previous sequential studies of motivational interviewing have improved our knowledge of the link between therapist and client language, the common practice of collapsing individual therapist behaviors into composite categories limits application of these findings to inform clinical use of MI, including training and dissemination efforts. An additional challenge at interpreting previous findings in this area are that some therapist behaviors (such as open questions) have been

alternatively categorized as MICO in some studies (e.g., Gaume et al., 2008), while categorized as "Other" therapist behaviors in some studies (e.g., Moyers & Martin, 2006). The aim of the current study was to examine individual therapist behaviors that comprise the composite categories, which may be more or less likely to elicit client change and sustain talk. We explored the unique role of individual therapist behaviors to elicit different types of client language, but did not propose directional hypotheses given the exploratory nature of those analyses. The goal of this line of work is to help clinicians identify the relative importance of choosing among multiple therapist behaviors to enact (such as simple or complex reflections, open or closed questions, and giving information) in order to increase client change talk and reduce client sustain talk. The long-term goal is to better identify these more discrete, defined specific therapist behaviors that can be better understood, implemented, and taught in the use of motivational interviewing.

Although not of primary interest for this study, we also examined the relationship of composite categories of therapist behavior (MICO, MIIN, and Other) and subsequent client change talk and sustain talk in order to ensure that our sample was comparable to previous studies. We hypothesized that MICO behaviors would be more likely to be immediately followed by change talk and less likely to be followed by sustain talk, compared to therapist MIIN and Other behaviors.

2. Methods

2.1. Sample description

Audiotapes of MI sessions ($N = 92$) came from a previously completed study that investigated the impact of a single MI session to reduce harmful alcohol use among college students at a university in the northeastern U.S. (Barnett, Murphy, Colby, & Monti, 2007). The MI sessions were conducted by eight master's- or doctoral-level therapists who received 30 hours of MI training followed by weekly supervision on MI and protocol adherence. The MI condition was designed to enhance motivation to change drinking behavior, and if appropriate, collaborate with the student on creating a plan for change. There were six components to the MI. First, "Reviewing the Event" was designed to build rapport by the counselor eliciting information from the student in a nonjudgmental fashion. The student was asked about the event that led to the mandate for treatment, as well as any concerns that may have come up in the time since the event. Second, an exploration of "Pros and Cons" encouraged the student to describe what aspects of alcohol use he or she found to be positive, along with the negative consequences faced as a result of use. Third, the therapist initiated a discussion of "Social Influences." Students were asked what their friends and family thought about their alcohol use, how their friends and family responded to the referral event, and in what ways the student felt influenced by friends or family attitudes. Fourth, the "Feedback Report" included information about the referral event and a summary of past-month drinking and recent alcohol-related consequences. Normative drinking data were also presented, along with information about risks associated with risk-taking or family history of alcohol problems, as appropriate. The therapist presented the report, facilitated discussion about the various sections, and asked students for their reaction to the report. Fifth, "Envisioning the Future" provided an opportunity to have the student look forward to a future both with and without making changes to their drinking. Finally, for those who were interested in changing, the therapist and student collaborated on a "Plan for Change."

2.2. Process coding: Measurement

The Motivational Interviewing Skill Code version 2.0 (Miller et al., 2003) was used to code within-session therapist and client speech behaviors. The MISC identifies therapist behaviors that fall into three main categories (MICO, MIIN, Other; each comprised of a number of individual therapist behaviors) and client behaviors as change talk, sustain talk, or follow/neutral (client language that did not pertain to alcohol use). Table 1 provides more detail regarding individual language codes.

2.3. Process coding: Preparation of audiotapes for coding

Session tapes were prepared for coding in two steps. First, audiotapes were transcribed word-for-word. Second, transcripts were parsed, which involved manually marking up transcripts to divide lengthy statements into *utterances*, defined as a complete thought that ends either when one thought is completed or a new thought begins with the same speaker, or by an utterance from the other speaker. If two consecutive sentences warranted different codes, they were counted as separate utterances. A sample exchange would be parsed and coded as follows:

> Therapist:/"I'd like to start by talking about the event that led to your referral./What happened that night?"/(Structure/Open Question).Client:/"I was looking to meet some new people on campus, and drinking helps me to relax and makes it easier to meet people."/(Sustain Talk).

2.4. Process coding: Training and supervision

The study coders (five bachelor-level research assistants) received roughly 40 hours of training in the MISC coding system. The training protocol involved graded learning tasks, beginning with simple to increasingly complex identification of therapist and client behaviors. Raters progressed through a training library of role play and pilot audiotapes until rating proficiency was achieved (an intraclass correlation coefficient of .75 or greater). Weekly supervision meetings provided by three of the study authors (TRA, MM and NRM) addressed coder questions, specified decision rules, and provided targeted training on low agreement items.

2.5. Analytic plan

The primary aim of this study was to examine which individual therapist behaviors were more likely or less likely to elicit change talk and sustain talk. To address this aim, we examined associations between utterances at the sequential data level, following work done by Moyers and Martin (2006) and Gaume et al. (2008). Specifically, the associations under investigation are transitions between two adjacent utterances. Transition probabilities permit direct interpretation of the overall likelihood of a target behavior once a given behavior has occurred (Moyers & Martin, 2006). Thus, transition values can be read directly as the percent of time a target behavior (such as client change talk) follows a given behavior (such as therapist open question). These conditional probabilities denote the temporal relationship between an utterance (e.g., therapist open question) at time j and an utterance (e.g., client change talk) at time $j + 1$. We refer to the antecedent therapist behavior (at time j) as the initial event, and the later client response (at time $j + 1$) as the subsequent event.

We used Generalized Sequential Querier (GSEQ 5.1) software for the analysis of interaction sequences (Bakeman & Quera, 2011). Based on contingency tables (initial event at time j X subsequent event at time $j + 1$), we computed conditional transition probabilities and observed and expected frequencies, as well as tests of significance (based on observed versus expected cell frequencies, i.e., χ^2 test) and odds ratios, along with corresponding 95% confidence intervals. Note that expected cell frequency represents the probability of the target client behavior multiplied by the frequency of its given therapist behavior, which would be the frequency expected if, in fact, there is no association between the given and target codes. The odds ratio can be interpreted as the ratio of the odds of a given client utterance (e.g., change talk, versus a client sustain talk or client follow/neutral) occurring following an

initial therapist utterance (such as an open question) divided by the odds of the same utterance following any other coded therapist utterance. Odds ratios greater than 1.0 reflect a transition between the initial event and the subsequent event that is *more* likely to occur than chance, and odds ratios less than 1.0 reflect a transition that is *less* likely to occur than chance. Because our focus was on how therapist behaviors impact subsequent client behaviors, transition probabilities were calculated on the basis of all "same-type transitions," consistent with the approach of Gaume et al. (2008), where transitions were evaluated with respect to only therapist-to-client utterances (as opposed to all possible transitions that would also include client-to-therapist utterances; therapist-to-therapist utterances; and client-to-client utterances.)

3. Results

A total of 29,673 utterances were coded. Descriptive results including the relative frequency of each type of therapist and client statement per session are presented in Table 2, along with reliability analyses. Therapists exhibited high amounts of MICO and Other behavior, and very little MIIN behavior. Clients verbalized more than twice as much change talk per session than sustain talk, and client follow/neutral statements occurred fairly often as well.

A 20% random selection of cases was double-coded to verify interrater reliability. These are reported as an intraclass correlation coefficient (ICC; see Table 2, far right column), and were generally in the "good" to excellent" range as defined by Cicchetti (1994). Two therapist subcodes (support, structure) fell into the "poor" range, and two therapist subcodes (advise with permission, raise concern with permission) occurred too infrequently to be able to calculate reliabilities. These four therapist behaviors were thus not included in analyses. Additionally, all of the individual therapist subcodes that comprise the MIIN category (advice without permission, confront, direct, raise concern without permission, and warn) also occurred too infrequently to calculate reliabilities or to be analyzed individually. Therefore, only the reliability for the composite category of MIIN is provided. Furthermore, because MIIN behaviors occurred so infrequently, there were insufficient cell frequencies to facilitate sequential analyses any therapist subcodes from this composite category.

Table 2
Descriptive information of therapist and client behaviors per session and reliability.

	Frequency	% of total	Range	*M*	*SD*	ICC[a]
Therapist codes						
MI-consistent (MICO)	7,606	26%	12–173	82.6	2.9	.97
Advice with permission	18	<1%	0–4	0.2	0.6	–
Affirm	591	2%	0–32	6.4	6.0	.89
Emphasize control	185	<1%	0–7	2.0	1.5	.77
Open question	1,856	6%	0–44	20.2	8.2	.92
Raise concern with permission	2	<1%	0–1	0.0	0.2	–
Complex reflection	2,149	7%	2–73	23.3	16.6	.61
Simple reflection	2,805	9%	1–92	30.5	19.6	.59
MI-inconsistent (MIIN)	69	<1%	0–8	0.8	1.5	.47
Advice without permission	48	<1%	0–8	0.5	1.2	–
Confront	0	<1%	n/a	n/a	n/a	–
Direct	7	<1%	0–3	0.1	0.4	–
Raise concern without permission	11	<1%	0–1	0.1	0.4	–
Warn	3	<1%	0–1	0.0	0.2	–
Other	8,865	30%	37–227	96.3	33.2	.91
Facilitate	356	1%	0–46	3.9	6.5	.91
Giving information	3,540	12%	9–96	28.4	17.2	.82
Closed question	2,926	10%	7–105	31.9	16.9	.74
Support	271	<1%	0–16	2.9	3.1	.29
Structure	1,772	6%	7–31	19.2	5.7	.09
Client codes						
Change talk	4,767	16%	8–116	51.8	20.6	.85
Sustain talk	1,995	7%	4–49	21.7	10.5	.54
Follow/Neutral	6,362	21%	19–218	69.2	35.3	.75

Note. ICC = intraclass correlation coefficient; .75 or above = excellent; .60–.74 = good; .40–.59 = fair; below .40 = poor (Cicchetti, 1994).
[a] Empty cells indicate ICC value not calculated due to extremely low base rates.

We began by examining the primary aims of the study: The relationship between individual therapist behaviors and client language. Table 3 shows transition analysis for therapist affirm, open question, complex reflection, and simple reflection (individual behaviors that comprise MICO), including the conditional probabilities, observed and expected frequencies, significance values, and odds ratios (and 95% confidence intervals) for all therapist-to-client transitions, where the initial event was a therapist utterance and the subsequent event was a client utterance. With the exception of affirm, all individual therapist behaviors were significantly more likely than chance to be followed by change talk *and* by sustain talk and were significantly less likely than chance to be followed by follow/neutral (all *p*'s < .001). Affirm was more likely to be followed by change talk and was also less likely to be followed by sustain talk. The column labeled *conditional probabilities* in Table 3 indicates the percentage of the time that a given client behavior occurred immediately following the given therapist behavior. For example, when a therapist verbalized an affirmation, it was immediately followed by client change talk 40% of the time, by sustain talk 5% of the time, and by follow/neutral 55% of the time.

We then examined subcodes of therapist Other therapist behavior (facilitate, giving information, and closed question), as shown in the bottom panel of Table 3. Giving information and closed questions were less likely than chance to be followed by change talk or sustain talk and more likely to be followed by follow/neutral (all *p*'s < .001). None of the transitions involving facilitate reached significance.

Finally, we conducted transition analyses of the relationship of composite categories of therapist behavior (MICO, MIIN, Other) and subsequent client change talk and sustain talk to be consistent with previous literature. Table 4 shows that MICO behaviors were more likely than chance to be immediately followed by both client change talk ($p < .001$) and sustain talk ($p < .001$), and less likely than chance to be followed by client follow/neutral ($p < .001$). None of the transitions involving MIIN behaviors reached significance. Therapist Other behaviors were less likely than chance to be followed by either client change talk ($p < .001$) or sustain talk ($p < .001$), and more likely than chance to be followed by client follow/neutral behaviors ($p < .001$), reflecting the opposite pattern of results found for MICO behaviors. Note that in order to present findings regarding individual therapist behaviors in the most practice-relevant manner, Table 5 contains the list of individual therapist behaviors most and least likely to elicit change talk and sustain talk.

4. Discussion

To our knowledge, this study is the first sequential analysis of therapist and client behaviors in a college student sample to focus on individual therapist behaviors. The composite code of MICO was more likely to be followed by change talk; however, MICO was also more likely to be followed by sustain talk, a finding consistent with a recent meta-analysis examining relationships between therapist MICO and MIIN, and client change and sustain talk, and outcomes (Magill et al., 2014). Regarding individual therapist behaviors, the use of reflections and open-ended questions seemed to facilitate client exploration (discussing both reasons for and against alcohol use), and curtail client discussion of non-relevant topics (i.e., less follow/neutral). In contrast, giving information and closed questions appeared to inhibit both change and sustain talk, and encourage discussion of less relevant topics (i.e., more follow/neutral). Only one individual therapist behavior, affirm, was followed by more change talk and less sustain talk.

The findings of this study provided here have clear clinical and training implications. First, the use of reflections (both simple and complex) and open questions may be the most efficient way to facilitate open discussion of the target behavior, including potential reluctance to change (change exploration, or sustain talk) as well as positive reasons for change (change talk). The valence of a given reflection or open question

Table 3
Transition analysis of individual therapist behaviors and client language.

Initial event → subsequent event	Conditional probabilities[a]	Observed frequencies	Expected frequencies	Significance	Odds ratio	95% CI for odds ratio
MI-consistent (MICO) behaviors						
Affirm → Change talk	.40	57	43.4	.013	1.53	[1.09, 2.14]
Affirm → Sustain talk	.05	8	17.9	.012	0.41	[0.20, 0.84]
Affirm → Follow/Neutral	.55	79	82.7	.531	0.91	[0.65, 1.25]
Open question → Change talk	.41	741	551.1	<.001	1.76	[1.58, 1.95]
Open question → Sustain talk	.20	369	226.9	<.001	2.09	[1.83, 2.39]
Open question → Follow/Neutral	.39	717	1,049.1	<.001	0.41	[0.37, 0.45]
Complex reflection → Change talk	.37	585	480.5	<.001	1.42	[1.27, 1.59]
Complex reflection → Sustain talk	.16	261	197.8	<.001	1.48	[1.27, 1.71]
Complex reflection → Follow/Neutral	.47	747	914.7	<.001	0.61	[0.55, 0.68]
Simple reflection → Change talk	.37	799	644.0	<.001	1.51	[1.37, 1.67]
Simple reflection → Sustain talk	.16	337	265.1	<.001	1.43	[1.25, 1.64]
Simple reflection → Follow/Neutral	.47	999	1,225.9	<.001	0.58	[0.53, 0.64]
Other behaviors						
Facilitate → Change talk	.32	109	103.2	.483	1.09	[0.86, 1.37]
Facilitate → Sustain talk	.10	33	42.5	.114	0.75	[0.52, 1.07]
Facilitate → Follow/Neutral	.58	200	196.4	.687	1.05	[0.84, 1.30]
Giving information → Change talk	.15	218	444.9	<.001	0.36	[0.31, 0.42]
Giving information → Sustain talk	.06	83	183.2	<.001	0.38	[0.30, 0.48]
Giving information → Follow/Neutral	.79	1,174	846.9	<.001	3.35	[2.93, 3.83]
Closed question → Change talk	.23	620	813.5	<.001	0.62	[0.56, 0.68]
Closed question → Sustain talk	.07	197	334.9	<.001	0.48	[0.41, 0.56]
Closed question → Follow/Neutral	.70	1,880	1,548.6	<.001	2.03	[1.85, 2.22]

Note. N = 92.
[a] Additional information for interpreting conditional probabilities is provided in the text.

by a therapist (e.g., reflecting or asking about change or potential change versus reflecting sustain talk or asking about reasons to continue drinking) is certainly liable to elicit differential responses. The finding that reflections and open questions evoked sustain talk (in addition to change talk) should not be taken as evidence for the MI therapist to avoid using these skills. It should be noted that the MI session included an exercise exploring the "Pros and Cons" of alcohol use, and that appropriate therapist questions and reflections of each client response would certainly contribute to the pattern of results noted in this study. This is consistent with MI theory, which posits that sustain talk is simply one side of ambivalence (Miller & Rose, 2009). Indeed, the most recent edition of the MI book contains numerous examples and descriptions of how a clinician can use reflections and questions as behaviors within MI to both evoke client change talk and to respond non-confrontationally to sustain talk (a natural part of the change process) in order to avoid having the simple presence of sustain talk lead to therapeutic discord, which is conceptualized as being determined by the MI therapist's response to sustain talk in a way that leads to disharmony in the relationship with the client (Miller & Rollnick, 2013).

Second, the therapist behaviors of giving information and asking closed-ended questions appear to inhibit the discussion of ambivalence and may actually divert attention away from the target behavior of interest. Hence, the MI therapist should give information when it is information that the client does not know and/or is intrinsically interested in (Miller & Rollnick, 2013), and may be more effective if there is ongoing eliciting of client interest in informational material provided (Rollnick, Miller, & Butler, 2008). Third, simple reflections were equally effective at eliciting both change talk and sustain talk as complex reflections. This is an important finding, because learning to form complex reflections is a challenging skill, while often trainees can form simple reflections more easily. Perhaps those that train or supervise others in the use of motivational interviewing need not spend as much time and effort teaching complex reflections to trainees (particularly those without a counseling background, such as medical providers). Fourth, and of particular note, was the finding that affirmation was the only individual therapist behavior linked both to *increased* change talk and to *decreased* sustain talk. Why might this be? One possibility could be that an affirmation, almost by definition, serves as a reflection of a client's change talk or an acknowledgement of a client's change-supportive qualities or actions, even if not previously acknowledged or stated by the client, thereby increasing the probability the client will follow-up with change talk.

This study had limitations that must be noted. First, the parent study did not find strong support for the efficacy of MI relative to a less intensive intervention. Also, in a previous study with this sample, which examined the relationship between client within-session

Table 4
Transition analysis, therapist composite categories (MICO, MIIN, Other) and client language.

Initial event → subsequent event	Conditional probabilities[a]	Observed frequencies	Expected frequencies	Significance	Odds ratio	95% CI for odds ratio
Therapist to client transitions						
MICO → Change talk	.38	2,184	1,727.3	<.001	2.37	[2.17, 2.58]
MICO → Sustain talk	.17	978	711.2	<.001	2.79	[2.45, 3.19]
MICO → Follow/Neutral	.45	2,565	3,288.4	<.001	0.31	[0.28, 0.33]
MIIN → Change talk	.29	6	6.3	.87	0.09	[0.36, 2.39]
MIIN → Sustain talk	.16	4	2.6	.36	1.66	[0.56, 4.95]
MIIN → Follow/Neutral	.52	11	12.1	.64	0.82	[0.35, 1.92]
Other → Change talk	.21	987	1,443.3	<.001	0.42	[0.39, 0.46]
Other → Sustain talk	.07	326	594.2	<.001	0.35	[0.31, 0.41]
Other → Follow/Neutral	.73	3,472	2,747.5	<.001	3.26	[3.00, 3.53]

Note. N = 92. MICO = MI-consistent; MIIN = MI-inconsistent.
[a] Additional information for interpreting conditional probabilities is provided in the text.

Table 5
Likelihood of individual therapist behaviors to be followed by client change talk and sustain talk.

Therapist behavior followed by →	Client change talk
Open question	41%
Affirm	40%
Complex reflection	37%
Simple reflection	37%
Closed question	23%
Giving information	15%
Therapist behavior followed by →	**Client sustain talk**
Affirm	5%
Giving information	6%
Closed question	7%
Simple reflection	16%
Complex reflection	16%
Open question	20%

language to drinking outcomes, sustain talk (but not change talk) predicted subsequent (poorer) outcomes (Apodaca et al., 2014). Second, these analyses only allow us to examine the immediate probability of change or sustain talk following the most recent therapist statement (lag 1). It remains to be seen whether the timing of sustain talk and change talk during the session (e.g., at the beginning, middle, or end) is particularly relevant in regards to subsequent behavior change. It may be that those therapist behaviors that facilitate the exploration of change (as evidenced by high levels of both change talk and sustain talk) are an important and necessary part early in the process of change, but that an overall reduction in sustain talk, along with an ongoing increase of change talk during the course of the session would be the ideal scenario to bring about behavior change.

This study was designed to identify individual therapist behaviors (rather than composite categories of behavior) to help improve training, teaching and supervising, and practicing motivational interviewing. At the time the data were collected and coded, we were using the most current available version of the Motivational Interviewing Skills Code (MISC 2.0), which classifies questions and reflections without regard to valence (i.e., whether the therapist is reflecting or asking about change talk or sustain talk). The most recent version of the MISC now differentiates reflections based on whether the statement reflects change talk, sustain talk, neither, or both (Houck, Moyers, Miller, Glynn, & Hallgren, 2010). Barnett et al. (2014) have recently shown that a reflecting change talk was more likely to be followed by additional change talk, while reflecting sustain talk was more likely to be followed by additional sustain talk. These findings suggest a clear interpretation of current findings: therapists will elicit change talk or sustain talk based on the valence of the reflection or question. A final limitation that must be acknowledged is that the current study represents only one sample of data from alcohol-focused brief intervention, which may not be representative of other brief interventions or other contexts for the use of MI. Importantly, college students – such as those comprising the current sample – are typically not seeking services, and as such a brief MI may be used more to challenge beliefs and raise concerns for potential future change rather than leveraging change talk into an immediate plan for changing alcohol use. Under these conditions students may have more sustain talk to explore than in other circumstances in which brief interventions are delivered.

5. Conclusion

The current study adds to existing literature by demonstrating that individual therapist behaviors have differential effects on client language. Specifically, certain therapist behaviors in motivational interviewing are more likely than others to elicit client language toward or away from change. This study has implications for clinicians and trainers of motivational interviewing in their efforts to help clients move toward a decision to change health behavior.

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