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Motivational Interviewing and the Clinical Science of Carl Rogers

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The clinical method of motivational interviewing (MI) evolved from the person-centered approach of Carl Rogers, maintaining his pioneering commitment to the scientific study of therapeutic processes and outcomes. The development of MI pertains to all 3 of the 125th anniversary themes explored in this special issue. Applications of MI have spread far beyond clinical psychology into fields including health care, rehabilitation, public health, social work, dentistry, corrections, coaching, and education, directly impacting the lives of many people. The public relevance and impact of clinical psychology are illustrated in the similarity of MI processes and outcomes across such diverse fields and the inseparability of human services from the person who provides them, in that both relational and technical elements of MI predict client outcomes. Within the history of clinical psychology MI is a clear product of clinical science, arising from the seminal work of Carl Rogers whose own research grounded clinical practice in empirical science. As with Rogers' work 70 years ago, MI began as an inductive empirical approach, observing clinical practice to develop and test hypotheses about what actually promotes change. Research on MI bridges the current divide between evidence-based practice and the well-established importance of therapeutic relationship. Research on training and learning of MI further questions the current model of continuing professional education through self-study and workshops as a way of improving practice behavior and client outcomes.

What is the public health significance of this article?
The person-centered approach of motivational interviewing (MI) can effectively change health behaviors that influence the prevention, course, treatment, and outcomes of a broad range of health problems. Research on MI bridges the current divide between evidence-based practice and the well-established importance of therapeutic relationship. Treatments of this kind are inseparable from the person who provides them.

Keywords: motivational interviewing, client-centered counseling, empathy, therapist effects, nonspecific factors

The election of Carl Rogers as President of the American Psychological Association in 1947 marked an historic melding of psychological science with clinical practice (Kirschenbaum, 2009). His commitment to the scientific testing of therapeutic assertions was remarkable in clinical psychology at the time: to operationally define and measure treatment process variables and test their relationship to client outcomes by recording, coding, and analyzing therapy sessions (including his own). In this way he anticipated by half a century the current clinical science emphasis on evidence-based treatment and research on therapeutic mechanisms. Rogers' research on the necessary and sufficient conditions for change provided a foundation for the scientific study of what have come to be called nonspecific, common, or general factors in psychotherapy. The therapeutic skill of accurate empathy is a prime example; it is reliably measurable, can improve with training and practice, and predicts treatment outcome (Elliott, Bohart, Watson, & Greenberg, 2011; Malin & Pos, 2015). To call this a "common" factor is somewhat misleading in that therapists vary widely in this skill and it is unclear how common accurate empathy is in actual practice. Nor is "non-specific" an apt description of such factors, in that they can be specified, measured, and studied in relation to treatment outcome. This is, in fact, what Carl Rogers and his students began: to clarify through scientific study what aspects of clinical practice actually promote positive change.

This article describes the development and scientific study of motivational interviewing (MI), a clinical method that evolved from client-centered therapy and has continued Rogers' commitment to the empirical study of treatment processes and outcomes. We first relate how MI evolved and discuss the surprisingly broad dissemination of this approach. Next we turn to four areas of research, summarizing (1) treatment outcome studies of MI, (2) the linkage of specific therapeutic processes to client outcomes, (3) the integration of MI with other treatment methods, and (4) how practitioners learn and develop competence in MI. Finally, we reflect on the "dustbowl empiricism" roots of MI and of the person-centered approach itself in contrast to the hypothetico-deductive tradition that has dominated modern psychology.

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The development of MI parallels broader changes within the history of clinical psychology. As noted earlier it was Carl Rogers who pioneered the idea that psychotherapy can be studied systematically and its processes and outcomes should be subject to empirical verification and replication by others, now core assumptions of clinical science. Hundreds of controlled trials of MI have evaluated outcomes across a wide array of clinical problems. Other active lines of research have been documenting its therapeutic processes (now termed *mechanisms*) as well as methods and outcomes of training for providers. Like Rogers' own work, MI spans the current debate between "evidence-based" treatment methods and general factors in the practice of clinical psychology because its documented "active ingredients" include relational elements such as accurate empathy (Miller & Moyers, 2015; Norcross, 2011). In this way research on MI is clarifying how such "nonspecific" factors can be specified and impact outcome across psychotherapies. Rogers' work on therapeutic relationship has similarly influenced practice and training in other contemporary evidence-based treatments such as dialectical behavior therapy (Linehan, 1993, 2015) and emotion-focused therapy (Greenberg & Watson, 1998, 2005).

Parallel Development of Motivational Interviewing and the Person-Centered Approach

What was originally termed a *nondirective* approach in counseling and psychotherapy was derived not from theory but from clinical experience, Carl Rogers' attempt to describe what he and his colleagues had been learning and doing in practice (Braver, Sandler, Hita, & Wheeler, 2016; Rogers, 1939, 1942). He regarded his assertions as working hypotheses to be tested: If indeed specific conditions during counseling predict change, then this relationship should be observable and replicable by others.

Like client-centered therapy, MI was derived not from any preexisting theory but from experience in clinical practice (Moyers, 2004). The first description of MI emerged during Miller's 1982 sabbatical at the Hjellestad Clinic, an alcohol treatment facility near Bergen, Norway. He arrived with new findings from a clinical trial showing large therapist effects in behavior therapy for alcohol problems and a strong predictive relationship between counselor empathy and client outcomes across 2 years (Miller & Baca, 1983; Miller, Taylor, & West, 1980). He was discussing an integration of behavior therapy with a person-centered approach in regular meetings with the clinic's psychologists, who asked him to demonstrate his counseling style. The psychologists posed particular clinical problems they were experiencing, role-playing clients whom they had been treating. As Miller demonstrated his approach the listeners stopped him often to ask good questions: "What are you thinking now?" "Why did you ask that particular question?" "From all the things that the client was saying, how did you decide what to reflect?" In the process, they evoked a provisional set of decision rules that he seemed to be using intuitively in practice, in essence guiding the conversation so that it would be the client rather than the counselor voicing the reasons for change. His responses to these questions formed the basis for the original clinical description of MI (Miller, 1983).

A defining difference of MI from nondirective counseling is the interviewer's intentional and strategic use of questions, reflections, affirmations, and summaries to strengthen the client's own motivations for change. In the early history of behavior therapy, Merbaum (1963; Merbaum & Southwell, 1965) verified that empathic reflections are a particularly strong form of verbal reinforcement for specific kinds of client statements. Truax (1966) demonstrated that Carl Rogers himself responded selectively to different types of client statements. Particular attention is given in MI to client "change talk"—originally termed *self-motivational statements* (Miller, 1983)—and a variety of specific methods (including empathic reflection) are used to evoke and strengthen such speech. Addictive behaviors characteristically involve ambivalence between immediate positive reinforcement and delayed adverse consequences, a phenomenon that Eysenck (1976) termed the *neurotic paradox*. In MI the interviewer selectively explores ambivalence, eliciting the client's own motivations for change while avoiding directive/confrontational communications that evoke resistance and psychological reactance (Brehm & Brehm, 1981; Patterson & Forgatch, 1985).

Back at the University of New Mexico Miller and colleagues began small randomized trials of MI, which they conceptualized as a motivational preparation for treatment. To their surprise, problem drinkers receiving a brief MI-based intervention (the "drinker's check-up") seldom sought further treatment but on average showed large reductions in alcohol use (Miller, Benefield, & Tonigan, 1993; Miller, Sovereign, & Krege, 1988). In process analyses they found, as Rogers had predicted, that client "resistance" (as operationally defined by Chamberlain, Patterson, Reid, Kavanagh, & Forgatch, 1984 and Patterson & Forgatch, 1985) was associated with poorer outcomes and that a single therapist behavior predicted both in-session resistance and subsequent client drinking: The more a therapist confronted, the more the client would be drinking 1 year later (Miller et al., 1993).

Subsequent collaboration with British psychologist Stephen Rollnick resulted in the first textbook describing MI as a therapeutic method in its own right, contrasting strongly with the confrontational approaches popular in American addiction treatment at the time (Miller & Rollnick, 1991). Rollnick contributed a focus on ambivalence as a key psychological dynamic whereby people considering change simultaneously want and do not want it. If a counselor argues for change, clients naturally respond with the other side of their ambivalence by defending the status quo. This might seem a harmless process, to act out the client's ambivalence (Engle & Arkowitz, 2005), except that people tend to be more persuaded by their own than by others' arguments (Bem, 1972). Thus if one counsels in a way that causes a client to defend the status quo, the predictable outcome would be no change.

The influential transtheoretical model of change that was also emerging in the 1980s emphasized a need for different clinical strategies depending on where clients are in the stages of change (Prochaska & DiClemente, 1984). MI provided a clear example of an intervention particularly appropriate for clients who are initially less motivated for change—those in the precontemplation, contemplation, and preparation stages (DiClemente & Velasquez, 2002). The "decisional balance" of pros and cons of change is a reliable marker of transtheoretical stages, and MI has been shown to alter that balance in clients' speech (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003; Gaume, Bertholet, Faouzi, Gmel, & Daeppen, 2010; Glynn & Moyers, 2010).

It soon became apparent that ambivalence about change is a common clinical issue across professions well beyond psychology.

In health care, for example, lifestyle behavior is a major determinant of illness, recovery, longevity, and quality of life. Yet most patients diagnosed with a chronic illness such as diabetes do not make the changes needed to remain healthy (e.g., Kurth et al., 2016). Thus MI found many applications in health care (Knight, McGowan, Dickens, & Bundy, 2006; Rollnick, Miller, & Butler, 2008), and its use has since spread into social work (Hohman, 2012), corrections (McMurran, 2009), dentistry (Carlisle, 2014), coaching (Antiss & Passmore, 2016; Wu, Dai, Xiong, & Liu, 2016), and education (Naar-King, Ernshaw, & Breckon, 2013; Snape & Atkinson, 2016). Subsequent editions of the MI text have therefore addressed change more generally, well beyond addictions and no longer limited to behavior change (Miller & Rollnick, 2013). This parallels the earlier progression of Carl Rogers' person-centered approach from individual counseling to many applications in other fields (Rogers, 1980).

The Surprising Reach of Motivational Interviewing

As described in preceding text, the practice of MI has extended far beyond its roots in clinical psychology. Many adoptions and adaptations of MI have preceded empirical evidence of efficacy within these applications, as is often the case in the diffusion of innovations (Rogers, 2003). MI texts have been published in 27 languages, and more than 3,000 professionals speaking at least 50 languages have received preparation as trainers through an international motivational interviewing network of trainers (www.motivationalinterviewing.org). From this subset of training alone, a conservative estimate is that at least 15 million people worldwide have already been recipients of MI (Miller & Rollnick, 2009). In a recent national survey (Rieckmann, Abraham, & Bride, 2016) two thirds of U.S. addiction treatment programs reported using MI. Training in MI has been implemented and even mandated for providers throughout entire state and national care systems. Carroll (2016) observed that "[t]here is no other empirically validated therapy that has achieved this level of world-wide dissemination, including cognitive behavioral therapies or structured family approaches" (p. 1153). All of this has occurred in response to demand, with virtually no centralized effort to advertise, market, or promote MI.

What may account for such broad dissemination of MI in 25 years since publication of the first text? In his masterful synthesis of research in *Diffusion of Innovations*, Everett Rogers (2003) described five attributes that promote the adoption of new methods or technologies.

Relative advantage. MI directly addresses what is a very common and often frustrating issue in practice: people's reluctance to change despite advice to do so. Whereas many interventions presume readiness for action as a prerequisite, MI was designed specifically to evoke and strengthen clients' motivation for change.

Compatibility. Innovations tend to be adopted when they are compatible with other current practices. As discussed subsequently, MI is a complementary method that can be used in combination with various treatment procedures. It is not meant to displace other practices except for those that may be incompatible with a person-centered approach (such as the confrontational methods that had been used in addiction treatment; White & Miller, 2007). MI and a client-centered approach more generally can be a foundational clinical style within which other treatments may be delivered (e.g., Mason et al., 2016; Naar-King & Safren, 2017).

Simplicity. Perceived complexity is an obstacle to the adoption of innovations. There is a deceptive simplicity to MI and to client-centered counseling more generally. It looks easier than it is. Miller and Rollnick (2014) have described MI as "simple but not easy."

Observability. Readily observable results encourage adoption. Practitioners can often see encouraging immediate changes in clients' interpersonal response when shifting from a directive-persuasion stance to more MI-consistent practices (cf. Glynn & Moyers, 2010; Patterson & Forgatch, 1985).

Trialability. Finally, adoption is also facilitated when an innovation can be tried out on a limited basis without making a major commitment. Early in their collaboration Miller and Rollnick decided not to trademark, copyright, or otherwise attempt to restrict the practice and training of MI. Detailed presentations of the spirit and method of MI have been readily available in texts, counselor manuals, and video demonstrations. Practitioners can and do try it out without having to undergo training or certification.

A necessary consequence of the decision not to restrict practice is a lack of any central quality control in delivery and training, a situation by no means limited to MI. Practitioners can "re-invent" MI by changing and adapting it to their own context and style. Reinvention is another condition that favors the diffusion of an innovation (E. M. Rogers, 2003) but can create variability in delivery that complicates evaluation of its efficacy (Miller & Rollnick, 2014).

Outcome Research

At present more than 500 controlled trials have been published testing various applications of MI across a wide array of clinical problems.[1] Proliferating systematic reviews and meta-analyses have supported (albeit not uniformly) the modest efficacy of MI in addressing clinical problems including substance use (Jensen et al., 2011; Kohler & Hofmann, 2015; Lundahl & Burke, 2009; Smedslund et al., 2011; Vasilaki, Hosier, & Cox, 2006), smoking cessation (Heckman, Egleston, & Hofmann, 2010; Lindson-Hawley, Thompson, & Begh, 2015), weight loss (Armstrong et al., 2011; Barnes & Ivezaj, 2015), eating disorders (Macdonald, Hibbs, Corfield, & Treasure, 2012), diabetes (Chapman et al., 2015; Ekong & Kavookjian, 2016), pediatric (Borrelli, Tooley, & Scott-Sheldon, 2015; Cushing, Jensen, Miller, & Leffingwell, 2014; Gayes & Steele, 2014) and adult health behavior (Lundahl et al., 2013; Martins & McNeil, 2009; McKenzie, Pierce, & Gunn, 2015; O'Halloran et al., 2014; Rubak, Sandbaek, Lauritzen, & Christensen, 2005), problem gambling (Yakovenko, Quigley, Hemmelgarn, Hodgins, & Ronksley, 2015), and medication adherence (Hamrin & Iennaco, 2016; Hill & Kavookjian, 2012).

Average effect sizes of MI, whether alone or in combination with other treatments are in the small to medium range with wide variability across studies. In multisite trials the efficacy of MI can vary by site (e.g., Ball et al., 2007). Large outcome differences across MI providers are typical even when counselors are trained together, closely supervised, and following a therapist manual

[1] www.motivationalinterviewing.org/sites/default/files/controlled_trials_with_mi.pdf

(Project MATCH Research Group, 1998a). One meta-analysis found that the use of a therapist manual predicted client outcomes, such that studies of MI using no manual reported double the effect size compared with studies in which MI was manual-guided (Hettema et al., 2005).

Such variability of effect begs for explanation. Why would the same treatment be effective for some studies, sites, and providers and not others? One obvious answer is that it is not actually "the same" treatment. Unlike medications, psychosocial treatments are inseparable from the person who provides them. Therapist empathy, for example, can exert a large effect on client outcomes with behavioral treatments for which it is not an hypothesized mechanism of change (e.g., Miller et al., 1980). Therapist fidelity in providing a treatment can be highly variable even in controlled trials, and this may be particularly true for a complex relationally based therapy like MI (Miller & Rollnick, 2014). Outcome variability among providers within a treatment method can be much larger than differences between specific *bona fide* treatments. One contributing factor found to predict outcome differences among therapists is their level of humanistic "Rogerian" skills (Miller et al., 1980; Valle, 1981; Zuroff, Kelly, Leybman, Blatt, & Wampold, 2010). The limitations of providing and evaluating manual-guided brand-name therapies is a core issue in the heated debate between specific "evidence-based" treatments versus "nonspecific" relational factors (Miller & Moyers, 2015). MI occupies an interesting middle ground in this discussion because its putative mechanisms overlap with what are often regarded to be nonspecific factors.

Process Research: The Search for Active Ingredients

Beyond the question of whether a treatment method works are the deeper issues of its mechanisms of action—the specific processes by which it evokes positive change. Miller and Rose (2009) proposed that at least two aspects of MI may account for its effectiveness: a relational component and a technical component. These elements mirror the larger debate in the psychotherapy literature about relative contributions of the helping relationship versus more specific technical procedures (Wampold & Imel, 2015). In MI, both spirit and technique are privileged and both are hypothesized to be important to the full impact of the intervention. Treatment procedures have been well specified for both relational and technical components of MI (Hardcastle, Fortier, Blake, & Hagger, 2016).

The relational or "spirit" component, as noted above, rests on the client-centered approach developed by Carl Rogers with particular emphasis on accurate empathy, respect for client autonomy, and egalitarian collaboration in the relationship. The technical component of MI pays particular attention to certain elements of client language during the interview. Specifically, client change talk is thought to increase the probability of a favorable outcome when it occurs spontaneously in the context of an empathic conversation. Conversely, language in favor of keeping things as they are (called "sustain talk") helps clients talk themselves into *not* changing if they hear themselves saying it during an interview (Miller & Rollnick, 2004).

"Evidence-based" therapies often do not seem to work for the hypothesized reasons (Longabaugh, Magill, Morgenstern, & Huebner, 2013; Longabaugh & Wirtz, 2001). Explanations for the effectiveness of MI focus on specific behaviors of interviewers that are especially consistent with this approach (e.g., emphasizing autonomy, seeking collaboration, reflecting change talk) and that quickly increase the probability of change talk (and decrease the probability of sustain talk), which in turn predicts the likelihood of subsequent change. Process research in this area has addressed each of the links in this causal chain. Relatively good support is evident for the link between therapist behaviors and client language during MI sessions. Specifically, better MI skills predictably increase the frequency and strength of client change talk in sessions, whereas proscribed practices (such as confrontation, giving advice without permission, and low empathy) increase sustain talk (Borsari et al., 2015; Gaume et al., 2010; Hodgins, Ching, & McEwen, 2009; Magill et al., 2016). Further, the link between client language and outcomes is promising, indicating that clients who offer relatively more change talk than sustain talk during sessions are more likely to improve, whereas those who offer more sustain talk are not (Campbell, Adamson, & Carter, 2010; Gaume, Bertholet, Faouzi, Gmel, & Daeppen, 2013; Hodgins et al., 2009; Morgenstern et al., 2012; Walker, Stephens, Rowland, & Roffman, 2011). Finally, the full causal chain between therapist behaviors, client language, and behavioral outcomes has been replicated in four different laboratories (Barnett et al., 2014; Moyers, Martin, Houck, Christopher, & Tonigan, 2009; Pirlott, Kisbu-Sakarya, Defrancesco, Elliot, & Mackinnon, 2012; Vader, Walters, Prabhu, Houck, & Field, 2010) indicating a level of support for the putative mechanisms of this treatment that is at least as strong as for other psychotherapies. The evidence indicates that interviewers will hear more change talk and less sustain talk if they avoid giving advice and information to ambivalent clients and instead focus on reflecting empathically the client's own reasons for change. This shift in client language is, in turn, associated with greater subsequent behavior change.

Although the empirical foundation for causal mechanisms in MI is robust, all but two of the studies investigating this question to date have been correlational in nature. Observed correlations between change talk and improved outcomes could be explained by positing that an unmeasured mechanism of action such as client motivation, awareness of discrepancies between actions and values, diminished resistance, or enhanced perception of autonomy may be influencing both of these events. Experimental study of proposed active mechanisms in MI is an important next step, beyond simply showing a correlation between the presence of a variable and a subsequent change in behavior. With regard to client language, current experimental evidence is encouraging. Using an ABAB design Glynn and Moyers (2010) demonstrated that the frequency of client change talk can be substantially increased by the interviewer's intentional use of MI strategies and then reversed to baseline within a single session. A randomized controlled study further demonstrated that frontline addiction counselors who were trained in enriched strategies to intentionally influence language had less sustain talk from their clients than those trained in generic MI skills (Moyers, Houck, Glynn, Hallgren, & Manual, in press) indicating that clinicians can learn to intentionally influence clients' in-session speech.

In sum, research identifying specific processes that account for the effectiveness of MI largely supports its theoretical model, although contradictory findings have also been reported. Process

research in this area provides potentially important information about how MI should be most effectively practiced and trained.

Integrating MI With Other Treatment Methods

In addition to being used as a "stand-alone" treatment, MI has had a second life as an intervention that is combined with other approaches, most commonly cognitive and behavioral interventions (Naar-King & Safren, 2017). The rationale for this typically involves using MI to focus on increasing motivation to make changes (the "whether" and "why" of change), which are then addressed by more structured and skill-oriented procedures (the "how" of change). Such combined treatments have typically focused on specific problems such as generalized anxiety and depression (Westra, Constantino, & Antony, 2016), addictions (Longabaugh, Zweben, LoCastro, & Miller, 2005), obsessive–compulsive disorders (Meyer et al., 2010), medication adherence in the treatment of HIV (Parsons, Golub, Rosof, & Holder, 2007), intimate partner violence (Woodin, 2015), and eating disorders (Cassin & Geller, 2015). Hybrid treatments of this kind often yield encouraging outcomes relative to treatment as usual or to the other active treatment alone (Hettema, Steele, & Miller, 2005), although concrete procedures are seldom specified for choosing between the two approaches when clinical choice points are reached (Moyers & Houck, 2011). With some exceptions (e.g., Westra, Constantino, & Antony, 2016), these treatments front-load or add MI but do not truly integrate it into the partner intervention, albeit sometimes using the relational and humanistic elements of the MI treatment as a foundation for the entire course of treatment. In essence MI serves as a framework for incorporating attention to "common" factors into longer and more structured treatments (Longabaugh et al., 2005). Rather than just adding MI to another treatment, Vansteenkiste and colleagues (2012) focused on truly integrating MI with self-determination theory. Because of the emphasis on client autonomy support, certain elements of MI were more prominent than they might otherwise be, but the larger framework of each method was preserved.

Hybrid treatments are rarely compared to an MI-only condition. This may reflect an assumption that a brief, motivation-focused intervention would be insufficient to initiate change, although exactly such outcomes are not unusual in the treatment of substance use disorders, where MI informed interventions have usually performed as well as more extensive treatments (e.g., Project MATCH Research Group, 1998b; UKATT Research Team, 2005).

Training Research

When there is evidence for the efficacy of a treatment method and for the mechanisms by which it works, a remaining question is how best to help clinicians develop and maintain fidelity in delivering it. MI is a method that most (albeit not all) clinicians can learn with the help of structured training and enrichments such as coaching and feedback on the basis of work samples (Madson, Loignon, & Lane, 2009; Miller, Yahne, Moyers, Martinez, & Pirritano, 2004). As with most psychosocial interventions, practitioner MI skills gained from a one-time workshop are modest at best and tend to decay to baseline within a year, but gains are stronger and are sustained longer if ongoing enrichments are available (Hall, Staiger, Simpson, Best, & Lubman, 2016; Miller, Sorensen, Selzer, & Brigham, 2006; Schwalbe, Oh, & Zweben, 2014). Again paralleling other types of psychotherapy (Webb, Derubeis, & Barber, 2010), some studies find that the skill level of an MI practitioner after training predicts client outcomes (Copeland, McNamara, Kelson, & Simpson, 2015; Gaume, Gmel, Faouzi, & Daeppen, 2009; Martino, Ball, Nich, Frankforter, & Carroll, 2008; Thrasher et al., 2006), whereas others find no such relationship (Martino et al., 2016). These linkage findings offer optimism that practitioners can learn this complex clinical method and that when done well it can be expected to improve client outcomes. Demonstrating a clear causal chain between clinician training, improved fidelity, and better client outcomes awaits training trials powered to evaluate training, process, and outcome measures within the same study.

It remains to be determined what providers in an organization are the best candidates to learn and deliver MI, although it is clear that not everyone can do so. Even when training is uniform, variability in trainees' MI skills is the norm rather than the exception (Imel et al., 2014). In both research and practice it makes sense to train and supervise providers up to competence criteria rather than relying on a fixed dose of instruction (Martino, Canning-Ball, Carroll, & Rounsaville, 2011; Miller & Rollnick, 2014).

It is a reasonable question whether it is cost-effective to retrain staff in a complex empirically supported treatment (Carroll, 2016; Hall et al., 2016), particularly when treatment-as-usual controls may fare as well (Miller & Moyers, 2015). Substantial resources are needed to establish and maintain therapist skills in a complex intervention such as MI. Resources might be better spent in training the next generation of providers in evidence-based practices from the beginning and in hiring providers who can already demonstrate the requisite clinical skills.

Alternatively, training can be focused on providers who are better candidates for learning a particular approach. Neither experience nor professional background predict who will acquire better MI skills, and some studies even indicate that greater clinician experience bodes poorly for learning MI (Dunn et al., 2015), perhaps because there is more to unlearn. It has been our experience that clinicians prescreened for empathic skill learn MI more readily (Miller, Moyers, Arciniega, Ernst, & Forcehimes, 2005), a far better predictor than personality styles, theoretical orientation, or educational achievement (Miller et al., 2004). Furthermore, providers' baseline skill in empathic listening predicts their level of empathy in actual treatment sessions as long as a year later (Moyers & Miller, 2013) as well as their clients' outcomes (Moyers et al., in press).

Although behavioral demonstration of requisite skill level is sensibly used in screening and hiring for various occupations, it has seldom been implemented when selecting candidates to be behavioral health providers. Therapist skill in accurate empathy is observable, reliably measurable, and predicts client outcomes (Moyers & Miller, 2013). It is therefore possible to assess empathic skills as a hiring criterion for clinical providers, such as those who will be expected to deliver MI. We used a behavioral practice sample of empathic skill in choosing therapists for the COMBINE Study (Miller et al., 2005). Despite a reduced range (we hired only candidates above a threshold for good empathic skills), therapist empathy measured from treatment sessions still predicted client drinking at the end of treatment (Moyers et al., in

press). Given the high cost of training and retraining providers, prescreening for humanistic counseling skills including empathy may prove be a cost-effective criterion when hiring providers in agencies where MI is offered.

Discussion

Motivational interviewing has continued the clinical science tradition pioneered over 70 years go by Carl Rogers, that psychotherapy processes are reliably observable and therapeutic assertions should be tested and replicable (Rogers, 1939). Research on MI has also provided further support for hypotheses posed by Rogers: for example, that relational components such as accurate empathy significantly influence clinical outcomes, and that an expert-directive approach evokes needless resistance that in turn predicts lack of change.

Research in clinical psychology continues to rely heavily on a hypothetico-deductive approach and binary significance testing of a priori assertions despite their well-recognized limitations (Cohen, 1994; Jørstad et al., 2016). Both Rogers' person-centered approach and MI emerged through abductive reasoning from clinical experience (the broader meaning of "empirical"), gradually moving toward and testing provisional theory to account for observations (Miller & Rose, 2009; Rogers, 1959). Clinical science progresses from that kind of dance back and forth between the context of discovery and the context of justification (Reichenbach, 1938).

Within the context of justification, given the breadth of clinical trial support for the efficacy of MI it is reasonable to say that something clinically meaningful is happening in these conversations that is replicable across a wide range of behavioral domains. Yet large variability in the effect of MI is evident among providers, sites, and clinical trials. A substantial body of process research already points to some important aspects of MI practice that are linked to clinical outcomes, such as therapist empathy and MI-consistent fidelity (including refraining from MI-inconsistent practices). Indeed, these aspects of therapeutic skill appear to predict client outcome not merely in MI but in other treatment approaches (such as cognitive-behavior therapy) as well (Elliott et al., 2011; Magill et al., 2016; Moyers et al., 2007).

What is it about practice that promotes change? The question is much deeper than listing name-brand therapies supported by randomized trials. Even within highly controlled clinical trials there is usually significant variability of outcomes across sites and providers. Outside the highly supervised confines of research, variability in fidelity of practice is likely to be greater still. Without complex quality assurance, any requirement to provide an evidence-based practice such as MI reduces to verbal assurance that the provider or system is doing so.

Research on the training of MI indicates what we should already have known, that developing proficiency in a therapeutic skill is a complex and ongoing process, and self-reported competence is at best weakly related to actual proficiency in observed practice. Continuing professional education in psychology continues to rely primarily on self-study or attending a day or two of instruction, neither of which—at least for MI—yields significant improvement in practice behavior (Miller et al., 2004). Whereas surgeons' outcomes improve dramatically with years of practice, the same is generally not true for psychotherapists (Beutler, Machado, & Neufeldt, 1994). Psychological practice still proceeds largely unobserved behind closed doors without meaningful feedback to promote learning (Lambert, Harmon, Slade, Whipple, & Hawkins, 2005). Carl Rogers brought psychotherapy out from behind closed doors with an open-minded and undefensive curiosity to discover what it is about practice that actually helps clients change. Research on MI has taken a few more steps on that journey.

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