Chapter 13
Motivational Interviewing Under a Behavior Analysis Perspective

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Introduction

Motivational interviewing (MI) is a treatment method used in the field of substance use disorders (SUD), developed by William R. Miller from his own clinical experience. MI is largely based on the person-centered approach (Rogers, 1959), as well as on other theories of social psychology and, although its origin is related to the area of substance abuse and dependence, this method has been widely studied and used for several other behavioral domains, such as adherence to the practice of physical exercise, modification of eating habits, and reduction of risky sexual behavior, among others (Lundahl et al., 2010). In addition, it has been shown to be more effective than no treatment and similarly effective than other treatment options, although more cost-effective due to its brief intervention character (Lundahl & Burke, 2009; Smedslund et al., 2011).

The objective of this chapter is to introduce MI to the behavior analysts' community, especially those unfamiliar with methods for treating patients with SUD, as well as to provide an analytical-behavioral understanding of the method and its main strategies.

Motivational Interviewing: Its Origins

According to Miller, in a report presented in the third edition of the book entitled *Motivational Interviewing* (Miller & Rollnick, 2013), in the 1980s, the addiction treatment in the United States was often highly authoritarian,

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S. M. Oliani et al. (eds.), *Behavior Analysis and Substance Dependence*,
https://doi.org/10.1007/978-3-030-75961-2_13

confrontational, humiliating, and relying on a directing style of counseling. People with such problems were characterized as pathological liars, with immature personality defense mechanisms and also with problems to maintain contact with reality. Surprisingly, Miller's first experiences in treating people with alcohol problems revealed that they were often open, interesting, and aware of the problems produced by their behavior. It did not take long for him to realize that the openness or resistance of the patient appeared to be a product of the established therapeutic relationship rather than a personality trait of individuals with such problems.

In a clinical trial of behavioral therapy for alcohol-related problems (Miller et al., 1980), the authors trained nine counselors in self-control techniques and in person-centered approach skills such as accurate empathy. After being trained, the same counselors performed self-control training in outpatients. Three supervisors observed and rated the extent to which each counselor exhibited accurate empathy while conducting the training. The therapist's empathy was able to predict two-thirds of the variance in the patient's alcohol consumption six months after treatment ended. Thus, the results observed suggested the importance of the therapist's emphatic style to engage patients in the proposed treatment.

After these initial findings (Miller et al., 1980), Miller developed the first version of his treatment approach. In a trip to Norway, the author had the opportunity to present and discuss the theoretical and empirical basis of this new approach with a group of psychologists gathered at the Hjellestad Clinic (Miller & Rollnick, 2001). According to Miller and Rose (2009), this environment was important for the clarification of his method, besides it has been an event that helped him in an important way in the writing of his original article, published in 1983 (Miller, 1983). In 1989, on a trip to Australia, Miller met Stephen Rollnick, who reported that MI was very popular in the treatment of SUD in the UK. Rollnick encouraged Miller to write a book,[1] which he co-authored, systematizing and helping to spread knowledge about MI. Since then, much has been produced and modifications have been proposed in relation to the concepts presented in the first edition of the book, such as the inclusion of the notion of the "spirit" of MI in the second edition,[2] in addition to an emphasis on the concept of *change talk* and *sustain talk* gathered in the third edition[3] together with an update of the "spirit" of MI.

[1] Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing: preparing people to change addictive behavior*. New York: The Guilford Press.

[2] Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: preparing people for change* (2nd ed.). New York: The Guilford Press.

[3] Miller, W. R. & Rollnick, S. (2013). *Motivational Interviewing: helping people change* (3rd ed.). New York: The Guilford Press.

Motivational Interviewing: Definition and Strategies

A basic element of MI refers to the understanding of ambivalence as a common and present behavior in any process of change. That is, having reasons to change and, at the same time, not to change is a normal human experience. According to Miller and Rollnick (2013), when a person presents ambivalence in relation to a subject of interest it is common to alternate the emission of two types of speech during a conversation. One type would be the *change talk*, in which the patient argues for change giving reasons, talking about his or her ability to change or committing to change. Another type would be the *sustain talk,* which corresponds to arguments in favor of maintaining the current behavior. According to the assumptions of MI, the therapist arguing in favor of change is counterproductive, since it causes sustain talk by the patient, which generally reinforces the conception that people with SUD are resistant, opposed, and in constant denial of their problems. In this scenario, one of the main objectives of MI is to modify risk behavior by exploring and solving this ambivalence. Thus, MI is defined as "a client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence" (Miller & Rollnick, 2002, p. 25).

In a more recent definition, the same authors refer to MI as:

> *(…) a collaborative, goal-oriented style of communication with particular attention to the language of change. It is designed to strengthen personal motivation for and commitment to a specific goal by eliciting and exploring the person's own reasons for change within an atmosphere of acceptance and compassion.* (Miller & Rollnick, 2013, p. 40).

At least two notions are important for the characterization of the MI, namely its "spirit" and processes. According to Miller and Rollnick (2013), there is an attitude that must be maintained by the therapist throughout the process, which the authors call "spirit". In the authors' own words, "without this underlying spirit, MI becomes a cynical trick, a way of trying to manipulate people into doing what they don't want to do" (Miller & Rollnick, 2013, p. 23).

There are four elements that make up the "spirit" of MI: partnership, acceptance, evocation, and compassion. Partnership involves establishing a positive interpersonal atmosphere that is conducive to change, but not coercive. The therapist searches for establishing an active collaboration between experts, considering that the patients are undisputed experts on themselves, to value the patient's perspectives, avoiding imposing the therapist's vision on the patient's vision. The deep acceptance derives from four other elements extracted from Carl Rogers' work, namely, absolute worth, accurate empathy, support to autonomy, and affirmation. In short, acceptance would involve recognizing the inherent value and potential of each human being; developing an active interest and effort in understanding the perspective of the other in his/her own way; honoring and respecting the autonomy or the irrevocable right of the person to choose his/her own path; and highlighting the strengths and efforts of the person, rather than what he/she lacks. In turn, evocation refers to the therapist strengthening the motivations for

change that are already present rather than focusing on installing that which is absent. Finally, compassion is about promoting the well-being of the other and prioritizing the needs of the other in the relationship.

Besides the "spirit" of the MI, another important notion for its understanding concerns its processes. In the first two editions of the book "Motivational Interviewing", the authors described MI operating in two phases: "building motivation" and "consolidating commitment". This division suggested a linear process of change, which did not correspond with the clinical observations. The process of MI, on the contrary, seems to be a process of phases, in which one overlaps with the other. These processes are thus recursive and, at the same time, sequential. Thus, in the third edition of the book, the authors elaborated four processes, which were expressed in the gerund to better represent its sequence and overlapping: "engaging", "focusing", "evoking", and "planning". "Engaging" consists in the process of building a therapeutic alliance that searches for solutions to the problems encountered. "Focusing" is the process by which a specific direction is developed and maintained in the conversation about change. "Evoking" is about evoking the patient's own motivations for change, i.e., having the patient himself argue for change. Finally, "planning" encompasses both the development of a commitment to change and the formulation of an action plan.

The practice of MI involves the flexible use of communication skills appropriate to the person-centered approach. These skills are present throughout all the processes of MI and are summarized under the acronym OARS,[4] formed from the expressions (1) open questions; (2) affirming; (3) reflections; (4) summarizing. Open questions are invitations to think and elaborate, unlike closed-ended questions, which search for specific information and can be answered by a short answer. In "engaging" and "focusing" processes, they help the therapist to understand the patient's frame of reference, strengthening a collaborative relationship and finding a direction, while in "evoking" and "planning" they help to strengthen motivation and to develop a plan for change. Affirming, on the other hand, is both general and specific, that is, it concerns both the therapist's ability to be attentive to the patient's resources and qualities and also to value his or her abilities, good intentions, or efforts during the sessions. Reflections are very important skills, since they clarify and deepen the meaning of what is said by the patient, as well as keeping him talking and exploring issues related to the desired behavioral change. They can be simple (i.e., literal reproductions of what the patient said) or complex (i.e., reproductions of the sense of his speech). Moreover, in MI, reflections are necessarily selective, which means that the therapist objectively selects what to reflect on, especially in "evoking" and "planning" processes, directing the patient's attention to specific aspects of his speech. Summarizing, in turn, constitutes wider reflections that connect current information with past information, besides being important in moments of transition from one task to another. In "engaging" and "focusing", the abstracts make it clear

[4] Originally, in English, the acronym is OARS, formed by *open questions*, *affirming*, *reflections* and *summarizing*.

to the patient that the therapist was attentive to what was said, valuing the content of the speech. In "evoking" they have the role of bringing together the change talk to continue the process of change, while in "planning" the summaries help to gather specific motivations, intentions, and plans for change.

In addition to the acronym, there is also a fifth skill which is "informing and advising". There are times when it is important to provide the patient with advice or information; however, they do not occur without the patient's consent to receive them and the therapist should make an effort to verify that the information is being well understood, according to the patient's ability to assimilate it. Furthermore, it is important for the therapist to remember that it is his job to allow patients to reach their own conclusions with the information or advice received.

Finally, Miller and Rollnick (2013) suggested that for a therapist to get the full learning from MI, it is important to have mastery of 12 tasks: (1) understand the underlying spirit with which MI is practiced, namely, partnership, acceptance, compassion, and evocation; (2) develop skills and comfort with reflective listening and OARS skills; (3) identify change goals to move toward; (4) exchange information and provide advice within an MI style; (5) be able to recognize change talk and sustain talk; (6) evoke change talk; (7) respond to change talk in a way that strengthens it; (8) respond to sustain talk in a way that does not amplify it; (9) develop hope and confidence; (10) learn the right time to negotiate a change plan; (11) strengthen commitment; and (12) integrate MI flexibly with other clinical skills and practices.

Motivational Interviewing: Mechanisms of Change

For MI, the change in behavior, in addition to a relational component based on its "spirit", which is responsible for reducing patient resistance, also depends on the appropriate use of techniques, which will allow the increase of change talk and decrease of sustain talk (Lundahl et al., 2011; Miller & Rose, 2009). Amrhein, Miller, Yahne, Palmer, and Fulcher (2003) found that a higher number of statements of commitment to change during the session predicted an increase in the proportion of abstinent days in drug abusers. Moyers and Martin (2006) further noted that therapists with speech consistent with the spirit of MI evoked more change talk, while those with inconsistent speech evoked more sustain talk.

Magill et al. (2014) performed a meta-analysis of the causal model established by MI seeking to evaluate the hypothesis that MI strategies produce changes in the discourse of patients and that these changes predict treatment outcomes related to behavior change. The found results confirmed that: (1) therapeutic skills consistent with MI (e.g., open-ended questions, reflections, and affirming) were associated with higher rates of change talk, while therapeutic skills inconsistent with MI (e.g., confrontations, warnings, unsolicited counseling) were associated with fewer change talk and more sustain talk; (2) higher rates of sustain talk were associated with worse treatment outcomes; (3) combined measures of change talk and

sustain talk, as well as statements of commitment, were positively related to behavior change, although change talk when taken alone was not associated with change.

Motivational Interviewing and Behavior Analysis: An Approach According to Christopher and Dougher (2009)

Both Behavior Analysis and MI assume the relational nature of motivation for change. For Behavior Analysis, any behavior, including verbal one, is a function of the environmental variables that control its occurrence (Skinner, 1957, 1981). In this sense, a way to reinforce a given verbal behavior would involve the planning of adequate contingencies for the occurrence of such behavior. MI can be understood as a method in which there is a conscious effort by the therapist to come under control of the occurrence of so-called change talk, establishing the occasion for its emission and reinforcing its occurrence. In other words, through the person-centered approach (OARS) communication skills, there is an effort to differentially reinforce the occurrence of change talk within an environment with minimal aversive control (Christopher & Dougher, 2009).

A therapeutic environment with minimum levels of aversive control necessarily requires that the therapist constitutes a non-punitive audience (Skinner, 1953) for the patient. SUD patients usually come to clinical setting brought by family members and have a long history of exposure to coercive strategies to control their behavior which makes a non-punitive posture extremely necessary. Otherwise, an increase in the frequency of speech that topographically resembles change talk (e.g., perceptions of many losses related to the drug use) may be under control of reinforcers other than a real process of change (e.g., avoiding a reprimand by the therapist) (Oliveira, 2007). In other words, the change in the patient's verbal behavior may not be related to a change in the target behavior if coercive strategies are being employed, since such strategies may reinforce the occurrence of responses that reduce the probability of punishment, that is, characteristic responses of countercontrol strategies (Delprato, 2002).

The therapist's attention to the sequential, recursive, and overlapping nature of the four processes proposed by MI (i.e., "engaging," "focusing," "evoking," "planning") probably helps to reduce the occurrence of countercontrol responses. In other words, the differential reinforcement of change talk (i.e., a task proper to the "evoking" process) should not occur without the therapist first establishing a relationship of trust with the patient, establishing himself as a non-punitive audience (i.e., "engaging" task) and differentiating himself from the others who previously punished him. In other words, tasks related to the "engaging" process should occur before tasks related to the "evoking" process. At the same time, a therapist can use strategies of the "engaging" process even when "evoking" process tasks are being performed, which confers the circular character of these processes.

In summary, the therapist is more likely to establish himself as a non-punitive audience behaving in accordance with the "spirit" of MI (i.e., establishing a partnership relationship, not authoritarian, in which he values the knowledge of the patient about himself, not reprimanding or judging his behavior, and strengthening his motivations instead of implanting others), which helps to evoke more precise tact regarding the contingencies that govern his behavior. The more precise the patient is to contact the reinforcers or aversive stimuli associated with his or her risk behavior, the more accurate the patient's functional analysis can be described (Christopher & Dougher, 2009).

For example, an initial statement from an SUD patient may indicate that he would like to know strategies for stopping drug use. Moreover, other statements may also suggest that he does not understand the reasons for maintaining this behavioral pattern or cannot point out positive aspects related to drug use. A more detailed analysis, however, may reveal that tacts regarding the reinforcing consequences of drug use have been punished in the past, which is why the patient would have omitted them at this point.

Additionally, this behavioral pattern at the beginning of a therapeutic relationship possibly also indicates aversive consequences related to being judged by others in daily life. The therapist could even use this situation to explore other behaviors that fulfill the same function (e.g., isolate himself from people who do not use drugs to not be judged) and the distal consequences related to them. In general, faced with a demand as described in the previous example, therapists could focus only on implementing training in self-control strategies, missing the opportunity to expand the patient's contact with the problems related to the use of the substance (e.g., isolation of non-users) as well as to address the reinforcing consequences of this behavior (e.g., drug use euphoria, drug users socialization, escape from the responsibilities of daily life). Such a strategy could be an opportunity to recognize the need to expand contact with other reinforcers or to address alternative behaviors to produce similar reinforcers. In this sense, the use of simple open-ended questions, as proposed by MI (e.g., "what do you like about your cocaine use?" and "and what don't you like?"), can establish the occasion for a more in-depth analysis of the conflicting consequences and contingencies competing with the use of the substance. A more precise tact of the patient on the exemplified situation could be something like this: "I *like the acceleration that cocaine causes me. I talk a lot, I get along easily with the guys, especially after a stressful week that I spend with the care of my son, dedication to work and home. At the same time, I realize that I have become increasingly isolated from my family and friends. I am very embarrassed to face them, especially after nights that I come sniffing around. My son, as he is still very small, does not understand, but he will soon understand*" (sic). That is, by behaving in accordance with the "spirit" of MI and through the use of OARS communication skills (i.e., open-ended questions, affirming, reflections, and summarizing), the therapist indicates the absence of punishment and establishes himself as a discriminative stimulus for the patient to speak freely about their problem, reinforcing tacts from every contingencies related to the target behavior (Christopher & Dougher, 2009).

According to Christopher and Dougher (2009), among OARS communication skills, reflections (i.e., literal reproductions of the patient's speech or meaning) are critical to understand how the method can increase the frequency of change talk. In addition to the fact that the reflections have an autoclitic function,[5] since they increase the effect of the therapist's verbalizations that intend to communicate acceptance, they can function as establishing operations,[6] since they increase the reinforcing properties of the therapist's verbal behavior, thus leading to an increase in the likelihood of the patient emitting previously punished, painful, or sensitive behavior about his problem. In the example mentioned above, a reflection said by the therapist could be something like this: *"you notice that you have become more and more isolated from your family and friends because you feel ashamed. Also, you worry about your child's reaction when he or she can understand what is going on with you"*. In the face of this intervention, it would be likely that the patient would agree with the therapist and continue talking about this relevant clinical issue. Additionally, the patient would be more likely to "react better" to the therapist's future verbalizations. In this way, acceptance, signaled by reflection, can evoke a more precise exploration of the previously avoided contingencies, which can decrease the number of imprecise tacts about the contingencies related to the maintenance of the behavior problem (Christopher & Dougher, 2009).

For a more accurate understanding of how MI increases the change talk, Christopher and Dougher (2009) also sought to functionally define the different types of reflection and their different functions. In general, all of them could be classified as mands, since such reflections are operant behavior maintained by the specific consequence of evoking change talk and diminishing characteristic countercontrol responses, although they can also have an intraverbal function because they are evoked by a verbal discriminative stimulus. Simple reflections, for example, are those in which the therapist merely what repeat some patient's sentences, demonstrating that he understands what the patient said.

Complex reflections are related to a deeper level of demonstration of understanding in which the therapist specifies the contingency that controls the verbalization of the patient. Suppose, for example, that the phrase *"I like the acceleration of cocaine"* is said by the patient after the therapist has encouraged him to abstain from cocaine. In this context, the patient's phrase may be understood as a countercontrol response to avoid the therapist's punishment, who signaled his expectations regarding behavior change. The therapist could respond as follows: *"I understand … it would be difficult for you to stop using"*. In this sense, complex reflection can help reduce countercontrol, while increasing the likelihood that the

[5] The so-called autoclitic operant consists of a verbal unit that occurs together with other basic operants, modifying the effects of these basic operants on the listener (Barros, 2003; Borloti, 2004; Skinner, 1957).

[6] Establishing operations are environmental events that momentarily change the effectiveness of a stimulus as a reinforcer or punisher. This concept, in behavioral terms, is related to what is called motivation in generic terms (Michael, 1993; Miguel, 2000).

patient will talk about the contingencies that control his abilities to change (Christopher & Dougher, 2009). An amplified reflection is a speech in which the therapist usually exaggerates the patient's sustain talk for reducing countercontrol. At the same time, this type of reflection increases the probability that the patient will engage in more exploratory behavior for specifying the contingencies that control the problematic behavior. For example, in the face of a phrase like this: *"using drugs helps me relax,"* the therapist may respond: *"using drugs is the only way you relax"*. In this context, the patient is asked to agree with the speech that restricted the class of relaxing events to cocaine use or to repair it, describing other behaviors that share the same relaxing function. Thus, cocaine use becomes one more among other behaviors of this functional class that can still be distinguished as generating delayed aversive consequences (Christopher & Dougher, 2009).

Another speech by the therapist, named double reflections, relates the change talk with the sustain talk through a connective word such as "*and*", making clear the divergence between the patient's values and his or her current behavior. For instance, the therapist may say a phrase such as: *"you worry about being away from your family and find it difficult to relax without cocaine"*. Christopher and Dougher (2009) point out that in this case, the therapist's reinforcement by the patient having verbally come into contact with these contingencies can, through empathetic reflection, increase the reinforcing value of talking about behavior change, functioning as an establishing operation for the emission of change talk like that: *"maybe I can learn new ways to relax without cocaine"*.

Finally, the summaries, as more extensive reflections, relate the change talk and the sustain talk, trying to describe the full extent of contingencies that compete in controlling behavior. According to the authors, patients would be more inclined to express a commitment to change considering that they have already explored other behaviors that share the same function of the problem behavior without producing aversive consequences and come into contact with the discrepancy between their values and their current behaviors. In these conditions, the therapist reinforces the elaboration of selfmands about the change and helps the patient to elaborate a plan for it.

For the constitution of this plan, MI makes clear the importance of providing the patient with advice or information as long as the therapist has permission or consent to do so. Asking permission to inform or advise is a type of verbalization that performs an autoclitic function over other mands of the therapist, since they alter the aversiveness of the information or advice given, which may increase its effectiveness. To illustrate, a good example could be: *"Would it be ok for you if I told you some strategies that other people use to stop using cocaine?"*

Having explained how empathetic reflections can set the context for reinforcing change talk, Christopher and Dougher (2009) suggest the following functional definition of MI, which is reproduced here:

> *(…)MI evokes change talk by creating a therapeutic relationship of acceptance, collaboration, and client autonomy, which reduces counterpliance and avoidance of contact with painful contingencies related to drinking, while deliberately and differentially reinforcing*

> *change talk by using client-centered counseling skills (OARS) to establish variation in client verbal behavior related to change. The therapist reinforces the client's behavior of accurately tacting the full range of competing contingencies, both historical and current and proximal and distal, that govern drinking behavior. Thus, MI is essentially an environment deliberately arranged for the evocation of change talk and the elaboration of self-mands that are correlated with behavior change.* (Christopher & Dougher, 2009, p. 155).

Christopher and Dougher (2009) therefore highlight the importance of OARS communication skills and the "spirit" of MI in shaping a non-punitive audience environment, which reduces countercontrol responses. The authors also emphasize the importance of differential reinforcement of tacts on the various aversive and reinforcing consequences of risk behavior to collaborate in the elaboration of selfmands related to the desired behavior change. Although several studies highlight the correlations between change talks and behavioral change (Amrhein et al., 2003; Magill et al., 2014), the functional relationships between these two factors have not yet been clearly explored, as the authors highlight. In other words, why does increasing change talk influence post-session behavior? According to these same authors, three processes related to rule-based behavior (Skinner, 1969) would explain such influence. In the first case, the social contingencies present during the session and in the patient's natural environment reinforce the statement of commitment to change, which is a function of the interpersonal contingencies of the session in addition to the description of past and future consequences of the target behavior. This social environment, therefore, begins to monitor and reinforce behaviors congruent with the commitment made. Another process is related to the weakening of the control of certain rules, either when amplifying a class of behaviors that produce relaxation, weakening the rule "*cocaine helps me relax*", or clarifying behaviors necessary to deal with conflicting contingencies, weakening the rule "*my life will be better if I stop using, but I can't*". Finally, the process in which the therapist searches for evoking and understanding the patient's values is highlighted, thus expanding contact with high-magnitude reinforcers, which can help maintain certain behaviors even in the face of the availability of more immediate reinforcers in competing contingencies.

Using a more recent interpretation that presents considerable differences in the interpretation of verbal behavior when compared to Skinner (1957), Christopher and Dougher (2009) still highlight that the literature on function transformation (Hayes et al., 2001) is necessary for the explanation of why the verbal behavior of the patient and the therapist may alter the behavioral patterns emitted in the post-session. As Wilson and Hayes (2000) have pointed out, MI can figure as a potentially effective clinical strategy to alter the stimulus function of the ultimate consequences of a substance use contingency. However, it is beyond the scope of this chapter to present concepts related to RFT (*Relational Frame Theory*), although it is recognized the importance of understanding the effects of verbal contingencies involved in the relational response of substance users.

Final Considerations

According to the presentation, the manipulation of verbal behavior in the therapeutic environment, to some extent, may favor the change of risk behaviors displayed outside the aforementioned *setting*. Despite the differences between the theoretical bases of MI and Behavior Analysis, the propositions made by this method were analyzed in behavior analytic terms by Christopher and Dougher (2009), helping behavior analysts to assimilate effective clinical strategies for the treatment of SUD people.

For both MI theorists and behavior analysts, there is a special interest in understanding how verbal contingencies can participate in behavioral control. Although Christopher and Dougher (2009) have shed light on the likely mechanisms responsible for verbal behavior during MI sessions to change the source of target behavior control, further studies are needed to clarify these issues.

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