

Journal of Psychotherapy Integration

Case Formulation and Treatment Planning: How to Take Care of Relationship and Symptoms Together

Francesco Gazzillo, Giancarlo Dimaggio, and John T. Curtis

Online First Publication, July 25, 2019. <http://dx.doi.org/10.1037/int0000185>

CITATION

Gazzillo, F., Dimaggio, G., & Curtis, J. T. (2019, July 25). Case Formulation and Treatment Planning: How to Take Care of Relationship and Symptoms Together. *Journal of Psychotherapy Integration*. Advance online publication. <http://dx.doi.org/10.1037/int0000185>

Case Formulation and Treatment Planning: How to Take Care of Relationship and Symptoms Together

Francesco Gazzillo

Sapienza University of Rome

Giancarlo Dimaggio

Center for Metacognitive Interpersonal Therapy,
Rome, Italy

John T. Curtis

University of California, San Francisco


Most patients present with a combination of symptoms and relational problems, but often psychotherapies are not conducted in a way to deal with both. Many therapists take a *top-down approach* to treatments. That is, the techniques they use are based on their theories of therapy (that suggest how certain diagnoses should be treated) rather than on an understanding of the unique problems and issues of the individual patient. We suggest that what is needed is a *bottom-up approach*, in which the individual patient's goals, conflicts, inhibitions, and so forth are identified and therapeutic interventions are designed accordingly on a case-specific basis. The foundation of such an approach is a case-specific clinical formulation. There are a number of formulation methods; we focus on the plan formulation method to illustrate how to evaluate the individual needs and specificities of the therapy patient and then how to tailor a therapy to the individual patient, regardless of the therapist's theoretical or technical predilections. Finally, we report examples of therapies conducted in this bottom-up approach to demonstrate how symptoms and relational problems can and should be addressed.

Keywords: plan formulation methods, case formulation, psychotherapy techniques, psychotherapy relationship, relational difficulties

Most clients present with a combination of symptoms and relational problems, but often psychotherapies are insufficiently suited to deal with both. Treatments for symptom disorders, especially coming from the cognitive-behavioral therapy (CBT) tradition, often neglect interpersonal issues (e.g., Nordahl et al., 2018). Conversely, psychodynamic and humanistic approaches focus on relational dynamics but usually pay less attention to cognitive and behavioral techniques that target

specific aspects of symptom maintenance (e.g., Cain, 2002; Markowitz & Weissman, 2004; Stolorow, Brandchaft, & Atwood, 1987).

As an example of the first, we can point to behavioral activation, a well-documented, effective treatment for depression (Lewinsohn, 1974). Usually the focus of this approach is on changing behavior, with no systematic assessment of the existence of pathogenic schemas that made the person lose motivation to be active in daily life. Third wave cognitive therapies (e.g., Wells, 2011) focus on worry and rumination and are usually as brief in duration as four to five sessions. They teach clients to recognize that they are worrying—and that worry is noxious—and then provide clients with techniques aimed at diverting attention and drifting away from worrying. These approaches might not give attention to existential goals that are unmet and might leave the client unfulfilled and prey to different forms of suffering.

Francesco Gazzillo, Department of Dynamic and Clinical Psychology, Sapienza University of Rome;  Giancarlo Dimaggio, Center for Metacognitive Interpersonal Therapy, Rome, Italy; John T. Curtis, School of Medicine, University of California, San Francisco.

Correspondence concerning this article should be addressed to Giancarlo Dimaggio, Centro di Terapia Metacognitiva Interpersonale, Piazza dei Martiri di Belfiore 4, 00195 Rome, Italy. E-mail: gdimaje@gmail.com

Conversely, psychodynamic, humanistic, and existential approaches (Leichsenring & Salzer, 2014; Leichsenring & Schauenburg, 2014) are mainly focused on interpersonal patterns at the heart of suffering but might fail to explicitly deliver techniques such as behavioral activation, psychoeducation, exposure and attentional training and so forth to help with symptom reduction.

One might object, citing the “dodo verdict” (Luborsky, Singer, & Luborsky, 1975), suggesting that, overall, all treatments are equally effective, whatever outcome is considered (for an overview, see Wampold & Imel, 2015). Psychotherapy is effective in general and, yes, different methods look equally effective. However, the problem is that not all clients respond, and not all of them have full or stable responses (see, e.g., Shedler, 2018). This leaves open the questions: “What works for whom?” and “How can I deliver a treatment which is effective in all impaired domains of psychopathology for that unique client?” Some clinical vignettes help frame our argument.

A lawyer in his 40s has anxiety about his health, together with shame at the idea of being considered ridiculous if others discover his condition. He avoids social contact when he experiences heightened symptoms for fear of criticism, thereby depriving himself of sources of help and soothing and allowing more room for his worries about physical health. He reports that physical exercise and sports help reduce anxiety, but, when intensely worried, he remains passive, resulting in continued anxiety and ultimately depression.¹

A woman in her early 20s suffers from binge-eating, fueled by beliefs that others will despise and reject her because she is ugly and overweight. After any binge episode she purges or resorts to diuretics in order not to gain weight. In addition, she is prey to anger outbursts, triggered by the idea that her boyfriend is neglecting her or cheating on her. In these moments, she becomes emotionally dysregulated and experiences anxiety and jealousy and then anger. Her emotions spiral out of control, and she becomes verbally and, at times, physically aggressive. After these outbursts, she feels alone, guilty and resorts to binges as a dysfunctional self-regulation strategy. Then she frantically searches for her partner who is often unavail-

able, which leaves her feeling abandoned and desperate.

These clients might be diagnosed as having a combination of personality and symptom disorders, with both needing to be addressed for therapy to be effective. Moreover, their clinical pictures show how relational problems and symptom disorders sustain each other.

These situations in which symptoms and personality issues are interwoven are well known to clinicians, but many treatment manuals do not systematically address them. Manuals for symptom disorders, in fact, tend to neglect personality related problems. As an example, Reich and colleagues (2018) advocated that when treating panic comorbid with personality disorders, the clinician should not be distracted by personality issues but instead focus strictly on the manualized therapy for panic. Conversely, treatments for interpersonal problems often lack specific suggestions for how to address specific symptoms beyond their roots in interpersonal problems (e.g., Bleiberg & Markowitz, 2019).

Moreover, many approaches to therapy share what we call a *top-down approach*. Such an approach is epitomized by therapy manuals that dictate the application of specific techniques and approaches to patients based upon certain superordinate categories (usually diagnoses) into which these individuals fall. This is in contrast to a *bottom-up approach* that is case-specific and shaped by a comprehensive formulation of the individual patient’s problems and needs (Silberschatz, 2017). We contend that, in order to be effective, psychotherapy needs to be tailored to the unique client, which means paying the utmost attention to case formulation.

Different approaches, such as plan analysis (Caspar, 2019), the mode model in schema therapy (Fassbinder, Brand-de Wilde, & Arntz, 2019), and the formulation of maladaptive patterns in interpersonal reconstructive therapy (Critchfield, Panizo, & Benjamin, 2019), the dynamic formulation focused on motives, defenses, and conflicts (Perry, Knoll, & Tran, 2019) try to provide such a case formulation, with efforts to systematically address the issue in the case of personality disorders (Kramer,

¹ All the clients are a mixture of different patients and remain anonymous.

2019). Reviewing these different approaches is beyond the scope of this article, thus we focus only on what is required in a comprehensive formulation to guide treatment delivery.

A case formulation should include a comprehensive and coherent picture of what the patient is trying to pursue in psychotherapy, the obstruction(s) that prevent him or her from attaining what she or he wants, and how she or he will try to pursue it. We describe an approach to case formulation that identifies what a patient is looking for in therapy and then illustrate how this formulation helps the clinician (a) address relational problems per se and (b) understand and deal with alliance ruptures when treating symptom disorders with specific techniques.

The Plan Formulation Method (PFM)

The approach we present, the PFM (Curtis & Silberschatz, 2007), was developed by the San Francisco Psychotherapy Research Group (SF-PRG; Weiss, 1993; Weiss, Sampson, & the Mount Zion Psychotherapy Research Group, 1986) over the last 40 years. Originally, Caston (1986) proposed a three-step procedure for assessing the interjudge reliability of control-mastery theory (CMT) case formulations dividing their content into the following sections: (a) goals, (b) obstructions (pathogenic beliefs), (c) traumas, (d) tests, and (e) interventions. Next, he had a team of formulating judges develop a narrative formulation, which was then broken down into a series of statements or items for each of the formulation components (goal, obstructions, etc.). To these actual statements, the team added alternative items that were clinically plausible but less relevant to the particular case. Finally, he asked a new team of judges to rate each of the items (either *actual* or *alternative*) for its degree of relevance for the particular case.

Curtis and Silberschatz (1991) modified Caston's (1986) original approach:

Instead of developing a consensus narrative case formulation, which is then broken down into statements, each of the formulation judges independently review the clinical material and generate lists of items . . . Judges are instructed to use a standard format in preparing their items, and they are asked to include items that are plausible but of lesser relevance. After the formulation, judges have created their lists of items, the lists are compiled into a master list, which is then returned to the judges who independently rate all the

items for their relevance for the case. (Silberschatz, 2005 pp. 192–193)

More recently, the SFPRG added a section aimed at the integration of the components of the PFM and the CMT, Italian group (CMT-IG) slightly modified the test section of the PFM.

Research studies conducted so far show that, following this specific procedure, independent raters can formulate a plan with high levels of interrater reliability (ICC range = .8–.9 in most studies; for a review, see Silberschatz, 2005b and Silberschatz, 2017).

PFM has been applied and empirically validated in the treatments of adults, adolescents, and children and in individual, couple, and family therapies (e.g., Bigalke, 2004; Curtis & Silberschatz, 1991; Foreman, Gibbins, Grienenberger, & Berry, 2000; Fretter, 1995; Gassner, Sampson, Weiss, & Brumer, 1982; Gibbins, 1989; Horowitz, Sampson, Siegelman, Wolfson, & Weiss, 1975; Rodomonti, Crisafulli, Mazzoni, Curtis, Gazzillo, 2019; Silberschatz, 2005a, 2017; Silberschatz & Curtis, 1993; Silberschatz, Fretter, & Curtis, 1986; Silberschatz, Sampson, & Weiss, 1986; Weiss et al., 1986).

How to Formulate an Individualized Therapy Plan

Although the PFM reflects basic assumptions of CMT (Gazzillo, 2016; Silberschatz, 2005a; Weiss, 1993; Weiss et al., 1986), it might be easily employed by practitioners of different theoretical orientations. The components of the PFM are common to most approaches to psychotherapy case formulation. That is, they identify the patient's developmental and adaptive goals for therapy, the pathogenic beliefs or schemas that inhibit or prevent the patient from pursuing or attaining these goals (i.e., obstructions), the traumas or adverse experiences that give rise to these beliefs and schemas, the corrective experiences that will help the patient overcome his or her problems (i.e., the patient's tests and the responses needed from the therapist), and understanding provided by the therapist or developed by the patient that will be helpful (i.e., insights).

Goals

A patient's goals for therapy might include potential behaviors, affects, attitudes, or capacities that the patient would like to achieve. They

need to be reasonable and developmentally adaptive. What is developmentally appropriate might vary from person to person and from one culture to another. The clinician should be sensitive to such differences and attempt to discern on a case-specific basis the appropriateness of a particular goal for a given individual.

The goals might be highly specific and concrete (e.g., to get married) or more general and abstract (e.g., to move forward with one's preferences and not be ruled by guilt). Along the same line, these goals might be both explicitly stated by the patient, or the clinician might need to infer them from verbal and nonverbal behaviors and the patient's narrative.

Patients' presenting complaints might not accurately reflect their true goals because patients might not be able to acknowledge their innermost desires because, for example, they are unaware of them. Patients might also avoid disclosing goals they consider to be too bold, ambitious, or because they are afraid that they would evoke guilt or shame if overtly conceived and expressed. Therefore, the assessment of a patient's goals might require inferences. For instance, a patient might state a desire to get married while also feeling constricted at the idea of getting married. A careful formulation might unveil that he is more driven by the goal to pursue his career and that his wish to get married was, in that particular moment of his life, just a way to comply with his parents' expectations.

In pragmatic terms, the clinician might frame a patient's goals for therapy, in the following way: "The patient wants/needs/wishes to _____" (e.g., "To feel comfortable saying 'no' to others," "To be able to look for a better job," "To experience a greater sense of self-confidence or self-worth.")

To better articulate the different goals of a patient, we propose to refer to the classification of the human motivational systems proposed by Liotti (2017), which lists, among others, the following motivational systems: regulation of physiological needs, defense, exploration, attachment, care, status, cooperation, sex and intersubjectivity. Liotti's classification of motivational systems can help clinicians better differentiate the different goals of a patient and investigate their ontogenetic evolution in each specific patient. Moreover, it helps clinicians to integrate their theory with recent developments

in evolutionary thinking on human emotions and motivations.

The goals to be taken into account are those that the patient wants to achieve, with the role of the therapist being to infer and formulate them. Moreover, goals need to be formulated in plain language, without jargon or theoretical terms. For example: "You hope to feel free to do things your own way" instead of "You are driven by an exploratory motive" or "You hope that someone takes care of you when you feel alone and scared" rather than "You are driven by attachment."

Obstructions: Pathogenic Beliefs and Schemas

Obstructions are the pathogenic beliefs or schemas that hinder or prevent a person from pursuing or achieving appropriate developmental goals. Often these beliefs are unconscious in the early phases of therapy. They constitute obstructions because they suggest that certain undesirable consequences occur to the patient or to another person if the patient pursues or attains a certain goal. For example, the patient believes that if she did well in school, her sister would be humiliated. Or, the patient believes that her mother will feel abandoned if she has close friends.

For a belief to be an obstruction, it must in some way influence the patient's thoughts, feeling or behaviors because of the negative consequences the patient foresees when trying to fulfill one or more appropriate developmental goals. For instance, the belief "If I am successful, I will do better in life than my sister" is an obstruction only if it inhibits the patient from pursuing a goal or causes her suffering when she tries to pursue that goal.

A pathogenic belief might act as an obstruction in more than one area. For instance, a patient's belief that her independence will hurt others might lead her to inhibit herself in her social life by, for example, not going on long vacations, and in her work life, for example leading her to abandon her career goals.

When formulating obstructions, it might be useful to follow the if-then format. For example, the patient believes that if s/he pursues a specific adaptive and pleasurable goal, then the patient her/himself, and/or an important person

and/or an important relationship would be threatened.

Traumas

Pathogenic beliefs and schemas derive from adverse relational experiences and traumas. Unless they lead to the development of an obstruction, events that might commonly be considered adverse or traumatic do not qualify as traumas for purposes of a case formulation. For example, “Frequently being hospitalized as a child lead him to pursue a career in medicine” is not a correct formulation of a trauma, unless the patient says something like the following: “Because I was sick so often as a child, I figured my health would always be an issue, and so I pursued a career in medicine rather than my true passion for the performing arts.” Similarly, events or experiences that generally might be considered benign or even beneficial could constitute a trauma if they result in the development of an obstruction. For example, “He was the favorite son, and this led him to feel he should hold himself back academically to even things with his siblings who felt humiliated by his successes.” The following example illustrates how adverse experiences can result in obstruction.

Gina, who was 35 years old, sought therapy for sexual dysfunction and a conflicted marital relationship. The formulation, developed around the lines we describe, helped her to understand her problem in the following terms:

I was a girl full of energy, but every time my mother saw I was happy or wanted to enjoy life, she was harshly critical and scolded me. I had to be the perfect good girl in order to not evoke her anger and judgment. Every time she understood that I was dating a boy, she became extremely alarmed and pushed my father to punish me. Once she called me a whore in front of a boyfriend who had brought me home after a party. I realize that my sexual problems are connected to my mother’s attitude; it’s like I still hear her voice.

Tests

Patients are driven by core adaptive wishes or needs, but they fear negative consequences if they pursue them. Consequently, as they try to pursue these wishes or needs, they are constantly scanning their environment for evidence proving or disconfirming their negative expectations. They might also test these expectations both in and outside of therapy.

Tests are trial actions or attitudes by a patient that are consciously or unconsciously designed to appraise the danger or safety of pursuing a particular goal or set of goals. When testing, the patient observes the behavior of the tested person to see if it confirms or disconfirms her/his expectation or belief. Patients, and human beings in general, perform tests in all their intimate relationships, so that it is possible to infer their favorite way of testing by interacting with them and carefully listening to their relational episodes.

We (Gazzillo et al., 2019) distinguish tests into two groups: transference tests and passive-into-active tests. *Transference tests* involve the patient behaving toward the therapist in a way that has induced, in others, responses that have led to the development or reinforcement of pathogenic beliefs or schemas. In *passive-into-active tests*, the patient responds to the therapist in a manner similar to how the patient has been responded to or how he or she would have liked to be responded to by others. Moreover, both transference and passive-into-active tests might be given with attitudes or behaviors that express compliance or noncompliance with the pathogenic belief tested.

By using this 2×2 testing strategy format (transference or passive-into-active by compliance or noncompliance), it is possible to anticipate the kinds of tests that the patient might propose to the therapist in order to disconfirm her/his pathogenic beliefs and how the therapist should respond in order to pass them.²

For example, a patient believed that if she separates herself physically from the people she loves, they would feel devastated (obstruction). This led to problems having a successful career (goal) because it necessitated her living in another city and to maintaining satisfying close relationships (goal) due to the fact that her partners ended up leaving her because they felt her to be controlling. This woman might test this belief with the following strategies:

1. She might remain close to therapist, be very punctual, and never miss a session, all to test whether the therapist needs for her to be this way—or whether the thera-

² This way of classifying tests has been proposed by the CMT-IG.

pist can support her being separate (transference test by compliance with her pathogenic belief). The pathogenic belief is undermined if her therapist does not need her to remain close.

2. She might miss sessions, arrive late and/or threaten to quit to see if the therapist is upset or frustrated by this behavior (transference test by noncompliance with the pathogenic belief). The pathogenic belief is undermined or disproved by the patient's experience of the therapist not suffering because of her "distancing" behavior.
3. She might try to make the therapist feel guilty when the latter has to cancel a session or goes on vacation. Her (unconscious) hope is that the therapist will not feel guilty or change his behavior, and thereby provide a role model for how to deal with the parents' behavior that supported the development of her pathogenic belief (passive-into-active test by compliance).³ In short, the patient behaves with the therapist as her traumatizing mother behaved with her. If the therapist reacts by feeling guilty, it could confirm her pathogenic belief that separating hurts other people. If the therapist does not feel guilt, he provides a new model for reacting to guilt inducing attitudes.
4. The patient might act in a relaxed and supportive manner when the therapist cancels a session or is late. She hopes that her behavior will make the therapist feel relieved (passive-into-active test by non-compliance).⁴ Here the patient tries to relate to the therapist as she would have liked her mother to behave toward her. If the therapist is able to benefit from this behavior, the patient might feel that her mother's reactions to her need to be autonomous were wrong, her need was legitimate, and her pathogenic belief can be disproved.

Tests can be formulated based on patient behaviors in early sessions and by hypothesizing in advance how the patient might test each of his or her pathogenic beliefs according to her/his goals and the four testing strategies presented above. Thus, a good plan formulation allows the clinician to anticipate the possible

testing components of different patient behaviors.

Early in therapy it can be helpful for the therapist to attempt to infer how a particular patient might test a belief or schema as evidence of that belief or schema becomes manifest. This can both help the therapist pass the patient's tests and optimize the therapist's ability to adopt an overall attitude that is useful for the patient. For example, a therapist treating a patient who suffered from the pathogenic belief of being inadequate and bad, developed in response to abuses suffered from a critical and derogating mother might conclude that an optimal attitude on his part would include being supportive (in this way, s/he will basically pass patient's transference tests), self-confident and able to appreciate patient's praise (i.e., to better pass passive-into-active tests).⁵

Insights on Core Problems

An Insight into core problems is a type of understanding, provided by the therapist or developed by the patient her/himself, which helps the patient achieve his or her goals. This understanding pertains to the nature, origins, and manifestation of the patient's pathogenic beliefs and schemas. A patient might gain an awareness of the content of a pathogenic belief, of her/his goals, of her/his way of testing people, and of the traumas s/he needs to master. When formulating an insight, the clinician might follow a format such as the following: "The patient needs to become aware that _____."

For example, harkening back to the former clinical vignettes, Gina's therapist told her: "Well, Gina, you are now aware that you inhibited yourself from having enjoyable sexual re-

³ As in the first kind of testing strategy, the patient's behavior shows her compliance with the pathogenic belief tested: if one person separates, then the other will suffer. However, the roles are reversed: now it is the therapist who separates, and the patient is the one displaying suffering.

⁴ This strategy is similar to the second one, because the patient's behavior expresses a non-compliance with the pathogenic belief tested: It gives the message that it is possible to separate without the other person suffering. Even in this case the roles are reversed: the therapist is the one who separates, whereas the patient is supportive and does not suffer.

⁵ The idea of adding, at the end of the test section, the optimal attitudes that the therapist should adopt with each specific patient has been proposed by the CMT-IG.

relationships with men because you felt guilty for allowing yourself to feel greater pleasure than your mother experienced.”

Integration of PFM Components

A final step entails fitting the different components (i.e., goals, obstructions, traumas, tests, and insights) into an integrative rubric to show their interrelationships. For example, each pathogenic belief is associated with the trauma(s) that spawned it, the goal(s) it is impeding, the test(s) the patient might pose to address it, and the insight(s) that might be relevant to it. Similarly, each goal is tied to the trauma(s), pathogenic belief(s), test(s), and insight(s) related to it.

This final step helps condensing the different components into one or more “statements” that summarize the formulation. Finally, this integration can help identify redundancies in the components (e.g., two or more pathogenic beliefs might turn out to be variations on a theme and thus can be condensed into one reworded belief).

How to Assess the Accuracy of a Formulation

Often, it is possible and advisable to formulate the patient plan within the first three or four sessions of therapy, when patients are particularly cooperative (Curtis, Silberschatz, Sampson, & Weiss, 1994; O’Connor, Edelstein, Berry, & Weiss, 1994). But how do we assess the degree to which a plan formulation is accurate?

First, a formulation must be comprehensive, accounting for everything the therapist knows about the patient thus far. Second, it should be coherent, connecting as accurately as possible all of the patient’s communications and behaviors. Third, it should be explicative; that is, it clarify the hidden logic of the communications and behaviors the patient displays during a session or a period of her/his therapy. The formulation must clearly interconnect the different life narratives and different interactional patterns with the therapist and other people. Fourth, a formulation needs to explain the patient’s reactions to the therapist’s communication/behavior. Fifth, the formulation needs to be specific; that is, it clearly ties the pathogenic beliefs to

the therapy goals and explain how they are inhibiting the patient from pursuing or attaining these goals. Also, it should include a specific assessment of the way the patient will test the therapist.

Evidence has shown that after interventions that are in accord with an accurate formulation of the plan of a patient (i.e., the *pro-plan*), patients tend to be less anxious, less depressed, more relaxed, bolder in trying to reach their goals, more engaged in the therapeutic relationship and in the therapeutic work, and more insightful.⁶ Following *pro-plan* interventions, a patient might bring forth new material and new memories and might test more vigorously her or his pathogenic beliefs (Curtis & Silberschatz, 2007; Curtis et al., 1994; Curtis, Silberschatz, Sampson, Weiss, & Rosenberg, 1988; Foreman et al., 2000; Horowitz et al., 1975; Silberschatz, 1986, 2005a, 2017; Silberschatz & Curtis, 1993; Silberschatz, Curtis, & Nathans, 1989; Silberschatz, Fretter, & Curtis, 1986).

However, the best indicator that the therapist is working in a *pro-plan* way is that the patient gets better and is committed to and expects to reach his or her goals. Actually Silberschatz (2017) found that the average level of plan compatibility of the communications delivered by the therapists correlated with outcomes in both symptoms and functioning, and with case-specific outcome measures developed on the basis of the specific problems of each patient involved in the study (Silberschatz, 2017).

After an “*antiplan*” intervention (i.e., one that is not in accord with an accurate formulation),

⁶ This is an example of a *pro-plan* versus *antiplan* communication. A patient looked for a psychotherapy because of his difficulties in developing a close relationship with women, and his plan implied that he wanted to disprove the pathogenic belief that he was overly responsible of other people well-being, so that he believed that if he put his wishes in the foreground, other people would have been deeply hurt and would have judged him egoistic. During a session, this patient said to his therapist that he was thinking about closing his actual, satisfying relationship because he had betrayed his woman and could not stand the idea of making her suffer, even if she was not aware of his affair. A *pro-plan* intervention would be an intervention aimed at helping the patient feel less responsible of her girlfriend’s well-being. On the contrary, an intervention aimed at understanding why he had had that affair if he felt that his relationship was satisfying, for example, would be judged *antiplan* because it could easily increase the patient’s guilt and his idea of being responsible of her girlfriend well-being.

on the contrary, patients tend to become less relaxed, more anxious or depressed; they might shift topic, remain silent, be unable to bring in new material, become less insightful, less involved in the therapeutic relationship and work; his or her communication might become more confused, s/he might also threaten to quit the therapy. Therapy might end up in a stalemate with no progress, and s/he might also threaten to quit the therapy. Provided that the intervention which stirred up these warning signals was delivered on the basis of the formulation of the patient plan, these responses indicate that something is wrong with the formulation, and the formulation should be revised. However, in some cases it is also possible that these reactions derive from a misunderstanding of the patient. For example, the patient interpreted what the therapist did or said according to her/his pathogenic beliefs and schemas and distorted the intention or the content of the therapist's communication. However, if these reactions to the therapist's interventions are frequent, it is evidence of the plan formulation being inaccurate.

An accurate plan formulation enables the clinician to deliver a case-specific treatment, independently from the theoretical orientation, favorite set of techniques, and style of the therapist. The plan formulation may be thought of as a kind of a roadmap or compass for orienting the treatment and provides the clinician with indications about if, when, and how each specific technique could be used for helping that specific patient to reach her or his goals. Two brief clinical vignettes illustrate how a plan formulation can be used to address the relational difficulties of a patient.

The Usefulness of the Plan Formulation Method When Dealing With Relational Problems

Barbara was a woman in her 20s who decided to start a therapy (twice a week vis-à-vis psychodynamic therapy with a male therapist), mostly because she suffered from prolonged mild depression. She also had persistent difficulties in feeling close to another person and in having a satisfying romantic relationship. Her self-esteem was very low, and she had some aspects of a narcissistic personality. She had never been in a truly loving relationship. At the

start of therapy, she had been involved for more than 2 years with a man who had never wanted to be her boyfriend and, after some months, had not wanted to see her anymore. Nonetheless, she had kept on seeking him, sending text messages, calling him, and pleading with him to spend time with her.

Among the core elements of her plan formulation were the goal of feeling deserving to be loved and appreciated by men and the pathogenic belief of being worthless ("I am a loser" and "I am difficult to stand"). She believed also that if she asked another person to fulfill her emotional needs, he would feel burdened by her and reject her. Both these pathogenic beliefs derived from adverse experiences she had had with both her parents and her brothers—they were critical and disparaging, neglected her emotional needs, and often said to her that she was the cause of the problems of their family. Her prevalent testing strategies were passive-into-active testing by compliance and transference testing by compliance. For example, in her first three months of therapy, at least once each session, Barbara said that she wanted to quit therapy, did not have any faith in it and in the therapist, and that she thought that all the time and money spent for the therapy was wasted. The therapist hypothesized that these behaviors were passive-into-active tests by compliance, related to her belief of being a burden to other people who would not love her in turn. As a consequence, he reacted to these tests by remaining calm and accepting. Sometimes he remained silent or simply said that he did not agree with her; other times he joked a bit about the patient's attitude, "Well, it is always nice to discover that another person likes you." On other occasions he ignored her criticisms and focused on helping the patient understand the origins of her low self-esteem by connecting it with her childhood experiences. In general, the patient reacted to these interpretations by bringing up new material that supported the idea that the therapist's interventions were consistent with her plan. However, she also insisted that her parents were in general good and loving and that it was not possible that her problems derived from the issues pointed out by the therapist. The therapist hypothesized that she held onto the beliefs that she was a burden and unlovable out of loyalty to her parents, whose self-esteem would have been severely damaged

if she had accused them of being the reason for her problems.

In the fourth month of her therapy, the therapist said he could not see her the following week. The therapist was quite surprised when the patient asked if it was possible to reschedule at least one session. Unfortunately, the therapist did not have room. He thought that the patient was testing him in order to see if he considered her needs as burdensome (transference test by noncompliance), so he decided to see Barbara on the holiday. During that session, Barbara for the first time thanked her therapist, showed him how much she suffered in her family, and was able to be critical of her parents' behavior. She reported that all the family was going to spend the holiday at the seashore, but when they were making their plans, she had been forgotten and was not included. "Nobody really cares about me. My presence is a problem."

By meeting with her on the holiday, the therapist passed a test, and this helped the patient feel safer in showing her suffering and needs because she saw that the therapist liked her and did not feel burdened by her needs. She felt free to cry, to feel a stronger intimacy with him, and to question the family behaviors that fueled her pathogenic belief. After that session, the patient started dating new men.

The Usefulness of the Plan Formulation Method When Treating Symptom Disorders

Many psychotherapists focus on the application of manualized interventions for symptom disorders and maintain that adherence to manuals is key to treatment outcomes. As we noted earlier, for example, Reich and colleagues (2018) advocated that even in the presence of comorbid personality disorders (i.e., problems in the relational domain) clinicians should not be distracted by personality issues and consistently stick to the manual for panic treatment. The tendency to deliver short-term, strictly manualized treatments for other symptom disorders is typical of CBT (e.g., Olatunji et al., 2013).

Our view is different. Any treatment for any symptom disorder is filled with nonresponders, partial responders, and dropouts, which means that the treatment was insufficient, partially insufficient, or inappropriate (see Dimaggio,

2019; Wampold, 2019 for such a discussion in the field of posttraumatic stress disorder). We contend that adopting an individualized case formulation, such as the one described in this article, will increase the likelihood of success and reduce dropouts even when delivering technically oriented and symptom-specific interventions. A clinical example illustrates this point.

Jim, a 45-year-old lawyer, sought therapy because of intense social anxiety. He had difficulties enjoying any aspect of social life because he feared sweating and becoming disgusting in the eyes of the others. His presenting complaint was that he wanted to overcome this symptom (goal). Moreover, he was mildly depressed as a consequence of a sense of poor self-worth, and he considered that having this symptom was a sign of weakness and was ashamed of having it (a second goal was having better self-esteem). He also had rigid moral and performance standards; for example, he could not rest and enjoy the landscape during a mountain walk because he had to stick to the planned routine (a third goal of this patient was to be able to relax and enjoy more his free unstructured time). Overall, the diagnosis included avoidant and obsessional personality disorders, in addition to social phobia and depression.

Initially his treatment went smoothly. The therapist proposed gradual exposure exercises to anxiety- and shame-evoking social situations, and Jim accepted. In a few sessions he was able to have dinner with close friends together with his wife. A next step was to overcome the situation that distressed him the most: going swimming in a pool. He liked swimming and wanted to have physical exercise, but the idea of being naked in the shower in presence of other men was intolerable to him because he was obsessed by the length of his penis and felt inferior to other men. As a consequence, he had avoided swimming for years. When the therapist proposed swimming as the next social exposure task, Jim firmly refused: "I do not want to do it now, I prefer dealing with that problem later." Initially, the therapist considered this as a form of avoidance: Jim had many experiences where his father had humiliated him because of his poor performance. The therapist and Jim had already connected his social anxiety to these memories, and the therapist suggested that Jim's avoidance was triggered by the heightened difficulty of the task. Jim accepted the

observation at a formal level but insisted that he did not want to perform the task and wanted to focus on other issues. The therapist understood there was no room for negotiation and acceded to Jim's wishes. He then explored what had been happening in the therapy relationship when he initially assigned the task.

Therapist: Jim, I realized I put some pressure on you to go to the swimming pool, even in the most gradual way. For example, I proposed that you just go there without even entering; just observe your reactions. But you clearly said no. I insisted a bit because you know I think that exposure is important for overcoming social anxiety, but I am aware this is not working, and I am pretty sure that insisting would be a mistake, and I would simply hurt you. So I am fully ok with your refusal. But with that said, I am curious about what you felt when you noted I was insisting. Did you have any specific thoughts or feelings?

Jim felt relieved by these observations and answered he felt constricted, like the therapist was domineering and limiting his freedom. The therapist said that was a very good observation and said:

Therapist: Good. So, if I insisted you would have thought I am the one in charge here, and your opinion counts less.

Jim: Yes, exactly.

Therapist: In that case I would have made you feel not respected. I understand now that it is better if you feel free to decide when to face exposure to the pool. By the way, does this situation, in which you have your own ideas and plans but someone takes over and decides for you, remind

you of some past experiences?

Jim realized that was the pattern with his mother. She very often took over important decisions from him, for example what sport to play or what high school to choose. He felt he had no power over his own life in many fundamental crossroads.

Jim's refusal to do what the therapist asked him to do was a transference test by noncompliance, and revealed that Jim needed to reach another goal which at that point was more important than being able to go to the swimming pool—he wanted to feel entitled to decide autonomously what to do in his life. The therapist's decision to give up the assignments conveyed to Jim that the therapist respected Jim's decision instead of sticking to his own "rules." After a couple of months, Jim voluntarily tried exposure and progressively started swimming again.

The therapist's approach was informed by an early assessment of Jim's interpersonal patterns (Dimaggio, Montano, Popolo, & Salvatore, 2015), which included both the awareness of problems related to social rank, for which behavior exposure was well-suited, but also to impaired autonomy. Until confronted with swimming, Jim had accepted the behavioral exercises, and they had been effective, though in the context of a constant attention and regulation of the therapy relationship (Safran & Muran, 2000). It is possible that, thanks to increasing trust developed out of those initial experiences in therapy, Jim felt safer and tested the therapist to see if he was able to give up to his own theory and practice and respect Jim's decisions, unlike Jim's mother. Thanks to the early case formulation, the therapist realized that he should not have pushed Jim to exposure to the swimming pool, something they explored soon after the decision to give up with the task.

Conclusions

The integrative psychotherapist is driven by the desire to offer a comprehensive and individualized treatment that meets the unique needs of a specific client. One major issue is that patients very often present with a combination of interpersonal issues and symptom disorders, and many treatments are (mainly) focused on one of

the two problems. Our idea is that, in order to optimize a treatment, it is necessary to develop a case formulation which takes into account: a) the internalized meaning-making structure underlying relational issues and b) how this internalized pattern of interaction (pathogenic beliefs and schemas) contributes to the genesis and maintenance of symptom disorders and might shape the therapeutic relationship. Simply put, in order to effectively overcome depression, trauma or obsessions, patients undergoing CBT need to feel that it is pro-plan for them to engage in the particular techniques recommended to them. What if patients do not accept the task? Our proposal is that a good enough case formulation can help the clinician both to deal directly with interpersonal issues and to understand the contribution of pathogenic schemas to the development maintenance of symptom disorder and to noncompliance with therapy tasks, practices or assignments. More than this, we think that the decision about if, when and which technique should be used in the treatment of a specific case depends on the formulation of that specific case.

We have used the plan formulation method (Curtis & Silberschatz, 1991, 2005, 2007; Curtis et al., 1994), whose core ideas are that patients come to therapy with an (unconscious) plan: They want to reach specific goals, to overcome the obstructions which prevent them from attaining these goals, to master the adverse repeated relational events/traumas which made them develop these obstructions, and to test their obstructions in the therapeutic relationship. When therapists pass tests, it fosters clients' sense of safety, awareness of their problems and their overall functioning. In sum, we suggest that good enough therapists endorse attitudes, responses, communications and techniques that help patients accomplish their plans.

With this formulation, we hope to provide a model for understanding patients' functioning that can help integrative therapists overcome treatment obstacles independently from their preferred orientation, and from the problems they are dealing with. We do not believe that this is the only possible way to frame clients' relational problems; many others have framed alternative models for case formulation (e.g., Caspar, 2019; Critchfield et al., 2019; Eells, 1997; Fassbinder et al., 2019; Kramer, 2019; Perry et al., 2019). In following articles, we plan

to provide a systematic assessment of formulations of interpersonal functioning in order to detect similarities and differences and distill shared principles.

Our proposal has limitations. First, in order to be tested, PFM requires a time-consuming analysis of the therapy process. Second, there is initial evidence that pro-plan interventions are linked to good outcomes (Silberschatz, 2017), but there is the need for replication in order to better understand if this happens in different disorders, when adopting different therapy modalities and the magnitude of the effect. Moreover, there is the need to determine if, as we hypothesize, the level of plan compatibility of therapist interventions is a better predictor of psychotherapy outcome than the level of adherence of the therapist to the manual, even in manualized treatments for specific disorders.

With further empirical support, these ideas might provide a useful tool helping clinicians delivering individualized treatments for both relational and symptom disorders, which is consistent with Hippocrates' notion that knowing the patient who has the disease is more important than knowing the disease the patient has.

References

- Bigalke, T. (2004). *The theoretical implications of applying the control-mastery concept of testing to family therapy* (Unpublished doctoral dissertation). California School of Professional Psychology, Alliant International University, Alameda, CA.
- Bleiberg, K. L., & Markowitz, J. C. (2019). Interpersonal psychotherapy for PTSD: Treating trauma without exposure. *Journal of Psychotherapy Integration, 29*, 15–22. <http://dx.doi.org/10.1037/int0000113>
- Cain, D. J. (2002). *Humanistic psychotherapies: Handbook of research and practice*. Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/10439-000>
- Caspar, F. (2019). Plan analysis and the motive-oriented therapeutic relationship. In U. Kramer (Ed.), *Case formulation for personality disorders. Tailoring psychotherapy to the individual client* (pp. 265–290). London, UK: Academic Press. <http://dx.doi.org/10.1016/B978-0-12-813521-1.00014-X>
- Caston, J. (1986). The reliability of the diagnosis of the patient's unconscious plan. J. Weiss, H. Sampson, & the Mount Zion Psychotherapy Research Group. (Eds.), *The psychoanalytic process: The-*

- ory, clinical observations, and empirical research (pp. 241–255). New York, NY: Guilford Press.
- Critchfield, K. L., Panizo, M. T., & Benjamin, L. S. (2019). Formulating key psychosocial mechanisms of psychopathology and change in interpersonal reconstructive therapy. In U. Kramer (Ed.), *Case formulation for personality disorders. Tailoring psychotherapy to the individual client* (pp. 181–201). London, UK: Academic Press. <http://dx.doi.org/10.1016/B978-0-12-813521-1.00010-2>
- Curtis, J. T., & Silberschatz, G. (1991). *The plan formulation method: A reliable procedure for case formulation*. Unpublished manuscript, University of California, San Francisco, CA.
- Curtis, J. T., & Silberschatz, G. (2005). The assessment of pathogenic beliefs. In G. Silberschatz (Ed.), *Transformative relationships: The control-mastery theory of psychotherapy* (pp. 69–91). New York, NY: Routledge.
- Curtis, J. T., & Silberschatz, G. (2007). Plan formulation method. In T. D. Eells (Ed.), *Handbook of psychotherapy case formulation* (2nd ed., pp. 198–220). New York, NY: Guilford Press.
- Curtis, J., Silberschatz, G., Sampson, H., & Weiss, J. (1994). The plan formulation method. *Psychotherapy Research, 4*(3–4), 197–207. <http://dx.doi.org/10.1080/10503309412331334032>
- Curtis, J. T., Silberschatz, G., Sampson, H., Weiss, J., & Rosenberg, S. E. (1988). Developing reliable psychodynamic case formulations: An illustration of the plan diagnosis method. *Psychotherapy: Theory, Research, & Practice, 25*, 256–265. <http://dx.doi.org/10.1037/h0085340>
- Dimaggio, G. (2019). To expose or not to expose? Different roads to similar outcomes in the psychotherapy for post-traumatic stress disorder. *Journal of Psychotherapy Integration, 29*, 1–5. <http://dx.doi.org/10.1037/int0000138>
- Dimaggio, G., Montano, A., Popolo, R., & Salvatore, G. (2015). *Metacognitive interpersonal therapy for personality disorders: A treatment manual*. London, UK: Routledge. <http://dx.doi.org/10.4324/9781315744124>
- Eells, T. (Ed.). (1997). *Handbook of psychotherapy case formulation*. New York, NY: Guilford Press.
- Fassbinder, E., Brand-de Wilde, O. & Artzn, A. (2019). Case formulation in schema therapy: Working with the mode model. In U. Kramer (Ed.), *Case formulation for personality disorders. Tailoring psychotherapy to the individual client* (pp. 77–93). London, UK: Academic Press. <http://dx.doi.org/10.1016/B978-0-12-813521-1.00005-9>
- Foreman, S. A., Gibbins, J., Grienberger, J., & Berry, J. W. (2000). Developing methods to study child psychotherapy using new scales of therapeutic alliance and progressiveness. *Psychotherapy Research, 10*, 450–461. <http://dx.doi.org/10.1093/ptr/10.4.450>
- Fretter, P. B. (1995). A control-mastery case formulation of a successful treatment for major depression. In *Session: Psychotherapy in Practice, 1*, 3–17.
- Gassner, S., Sampson, H., Weiss, J., & Brumer, S. (1982). The emergence of warded-off contents. *Psychoanalysis and Contemporary Thought, 5*, 55–75.
- Gazzillo, F. (2016). *Fidarsi dei pazienti. Introduzione alla Control-Mastery Theory*. Milan, Italy: Raffaello Cortina Editore.
- Gazzillo, F., Genova, F., Fedeli, F., Dazzi, N., Bush, M., Curtis, J. T., & Silberschatz, G. (2019). Patients unconscious testing activity in psychotherapy: A theoretical and empirical overview. *Psychoanalytic Psychology, 36*, 173–183. <http://dx.doi.org/10.1037/pap0000227>
- Gibbins, J. (1989, June 21–24). *The plan diagnosis of a child case*. Paper presented at the 20th Annual Conference of the Society for Psychotherapy Research, Toronto, Ontario, Canada.
- Horowitz, L. M., Sampson, H., Siegelman, E. Y., Wolfson, A., & Weiss, J. (1975). On the identification of warded-off mental contents: An empirical and methodological contribution. *Journal of Abnormal Psychology, 84*, 545–558. <http://dx.doi.org/10.1037/h0077139>
- Kramer, U. (2019). *Case formulation for personality disorders: Tailoring psychotherapy to the individual client*. New York, NY: Academic Press.
- Leichsenring, F., & Salzer, S. (2014). A unified protocol for the transdiagnostic psychodynamic treatment of anxiety disorders: An evidence-based approach. *Psychotherapy: Theory, Research, & Practice, 51*, 224–245. <http://dx.doi.org/10.1037/a0033815>
- Leichsenring, F., & Schauenburg, H. (2014). Empirically supported methods of short-term psychodynamic therapy in depression - towards an evidence-based unified protocol. *Journal of Affective Disorders, 169*, 128–143. <http://dx.doi.org/10.1016/j.jad.2014.08.007>
- Lewinsohn, P. M. (1974). A behavioral approach to depression. In R. J. Friedman & M. Katz (Eds.), *The psychology of depression: Contemporary theory and research* (pp. 157–178). Oxford, UK: Wiley.
- Liotti, G. (2017). Conflicts between motivational systems related to attachment trauma: Key to understanding the intra-family relationship between abused children and their abusers. *Journal of Trauma & Dissociation, 18*, 304–318. <http://dx.doi.org/10.1080/15299732.2017.1295392>
- Luborsky, L., Singer, B., & Luborsky, L. (1975). Comparative studies of psychotherapies. Is it true that “everywon has one and all must have prizes”? *Archives of General Psychiatry, 32*, 995–1008.

- <http://dx.doi.org/10.1001/archpsyc.1975.01760260059004>
- Markowitz, J. C., & Weissman, M. M. (2004). Interpersonal psychotherapy: Principles and applications. *World Psychiatry, 3*, 136–139.
- Nordahl, H. M., Borkovec, T. D., Hagen, R., Kenair, L. E. O., Hjemdal, O., Solem, S., . . . Wells, A. (2018). Metacognitive therapy versus cognitive-behavioural therapy in adults with generalised anxiety disorder. *BJPsych Open, 4*, 393–400. <http://dx.doi.org/10.1192/bjo.2018.54>
- O'Connor, L. E., Edelstein, S., Berry, J., & Weiss, J. (1994). The pattern of insight in brief psychotherapy: Two pilot studies. *Psychotherapy: Theory, Research, & Practice, 31*, 51–74. <http://dx.doi.org/10.1037/0033-3204.31.3.533>
- Olatunji, B. O., Rosenfield, D., Tart, C. D., Cottraux, J., Powers, M. B., & Smits, J. A. J. (2013). Behavioral versus cognitive treatment of obsessive-compulsive disorder: An examination of outcome and mediators of change. *Journal of Consulting and Clinical Psychology, 81*, 415–428. <http://dx.doi.org/10.1037/a0031865>
- Perry, J. C., Knoll, M., & Tran, V. (2019). Motives, defences, and conflicts in the dynamic formulation for psychodynamic psychotherapy using the idiographic conflict formulation method. In U. Kramer (Ed.), *Case formulation for personality disorders. Tailoring psychotherapy to the individual client* (pp. 203–224). London, UK: Academic Press.
- Reich, J., Schatzberg, A., & Delucchi, K. (2018). Empirical evidence of the effect of personality pathology on the outcome of panic disorder. *Journal of Psychiatric Research, 107*, 42–47. <http://dx.doi.org/10.1016/j.jpsychires.2018.10.005>
- Rodomonti, M., Crisafulli, V., Mazzoni, S., Curtis, T. J., Gazzillo, F. (2019). The plan formulation method for couples. *Psychoanalytic Psychology*. Advance online publication. <http://dx.doi.org/10.1037/pap0000246>
- Safran, J. D., & Muran, J. C. (2000). Resolving therapeutic alliance ruptures: Diversity and integration. *Journal of Clinical Psychology, 56*, 233–243. [http://dx.doi.org/10.1002/\(SICI\)1097-4679\(200002\)56:2<233::AID-JCLP9>3.0.CO;2-3](http://dx.doi.org/10.1002/(SICI)1097-4679(200002)56:2<233::AID-JCLP9>3.0.CO;2-3)
- Shedler, J. (2018). Where is the evidence for “evidence-based” therapy? *The Psychiatric Clinics of North America, 41*, 319–329. <http://dx.doi.org/10.1016/j.psc.2018.02.001>
- Silberschatz, G. (1986). Testing pathogenic beliefs. In J. Weiss & H. Sampson, & the The Mount Zion Psychotherapy Research Group. (Eds.), *The psychoanalytic process: Theory, clinical observation and empirical research* (pp. 256–266). New York, NY: Guilford Press.
- Silberschatz, G. (2005a). *Transformative relationships: The control-mastery theory of psychotherapy* (pp. 189–218). New York, NY: Routledge.
- Silberschatz, G. (2005b). An overview of research on control-mastery theory. In G. Silberschatz (Ed.), *Transformative relationships: The control-mastery theory of psychotherapy* (pp. 189–218). New York, NY: Routledge.
- Silberschatz, G. (2017). Improving the yield of psychotherapy research. *Psychotherapy Research, 27*, 1–13. <http://dx.doi.org/10.1080/10503307.2015.1076202>
- Silberschatz, G., & Curtis, J. T. (1993). Measuring the therapist's impact on the patient's therapeutic progress. *Journal of Consulting and Clinical Psychology, 61*, 403–411. <http://dx.doi.org/10.1037/0022-006X.61.3.403>
- Silberschatz, G., Curtis, J. T., & Nathans, S. (1989). Using the patient's plan to assess progress in psychotherapy. *Psychotherapy: Theory, Research, & Practice, 26*, 40–46. <http://dx.doi.org/10.1037/h0085403>
- Silberschatz, G., Fretter, P. B., & Curtis, J. T. (1986). How do interpretations influence the process of psychotherapy? *Journal of Consulting and Clinical Psychology, 54*, 646–652. <http://dx.doi.org/10.1037/0022-006X.54.5.646>
- Silberschatz, G., Sampson, H., & Weiss, J. (1986). Testing pathogenic beliefs versus seeking transference gratifications. In J. Weiss, H. Sampson, & the The Mount Zion Psychotherapy Research Group. (Eds.), *The psychoanalytic process: Theory, clinical observation and empirical research* (pp. 267–276). New York, NY: Guilford Press.
- Stolorow, R. D., Brandchaft, B., & Atwood, G. E. (1987). *Psychoanalytic treatment: An intersubjective approach*. New York, NY: Routledge.
- Wampold, B. E. (2019). A smorgasbord of PTSD treatments: What does this say about integration? *Journal of Psychotherapy Integration, 29*, 65–71. <http://dx.doi.org/10.1037/int0000137>
- Wampold, B. E., & Imel, Z. E. (2015). *The great psychotherapy debate. The evidence for what makes psychotherapy work*. New York, NY: Routledge. <http://dx.doi.org/10.4324/9780203582015>
- Weiss, J. (1993). *How psychotherapy works: Process and technique*. New York, NY: Guilford Press.
- Weiss, J., Sampson, H., & the Mount Zion Psychotherapy Research Group. (1986). *The psychoanalytic process: Theory, clinical observation, and empirical research*. New York, NY: Guilford Press.
- Wells, A. (2011). *Metacognitive therapy for anxiety and depression*. New York, NY: Guilford Press.

Received April 2, 2019

Revision received May 12, 2019

Accepted June 24, 2019 ■