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Investigation of Problem-Solving in Dyadic Relationships:
Creating a Bridge to Creative Problem-Solving

A Project in
Creative Studies

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ABSTRACT OF PROJECT

Investigation of Problem-Solving in Dyadic Relationships: Creating a Bridge to Creative Problem-solving

Select problem-solving models used in dyadic marital relationships are examined and compared with the Creative Problem Solving Model. Similarities and differences are identified between Creative Problem Solving and models used in marital education and counseling. Opportunities for the exchange of practices and tools between Creative Problem Solving and marital relationship problem-solving models are described. Implications to Creative Problem Solving and Creative Studies are examined.

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Date

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Section 1: Statement of the Opportunity

Introduction

This section discusses the context and role of problem-solving skills in relationships and presents the study questions for this project.

Discussion

A number of studies (Markman, 1981; Markman, Renick, Floyd, Stanley, & Clements, 1993; Pasch & Bradbury, 1998) have found that problem-solving skills are important to marital stability and satisfaction and a number of prevention and intervention programs and models have been developed and used. The primary purpose of these models is to enhance couple's relationship skills, including problem solving, in an attempt to improve marital satisfaction and stability. Part of the impetus for this marital research and program development has come from a divorce rate that has been estimated to be 50% for the past decade (U.S. Bureau of Census, 1991). Epstein, Baucom, and Daiuto (1997) summarize some of the longer term benefits of effective problem solving as follows:

To the extent that problem solving leads to the couple's experience of working together productively to resolve issues in their marriage as well as implementing needed solutions, problem-solving has the potential to influence important

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cognitions and emotions. When spouses witness their partners compromising and implementing solutions, their expectancies or predictions about the future of the relationship can change due to this new information. As a series of issues are resolved and the relationship improves, their attributions for their partners' previous negative behavior might become more benign... Furthermore, as each spouse behaves more frequently in ways that please the partner, the partner's emotions toward the individual are likely to change in a positive direction. Thus, problem solving has the potential to have impacts on a variety of behaviors, cognitions and emotions. (p. 435)

Alex Osborn, the founding father of Creative Problem Solving, indicated the utility of problem-solving skills in relationships as early as 1953. Alex Osborn (1993) discusses personal problem-solving and marital issues in his 1953 text *Applied Imagination* and says, in summary, "Married or single, active use of imagination [creativity] can enable everyone to get more out of life. (p. 394)."

Martin (1997) identified several marital problem-solving models in a review of the literature and compared them, in summary, to the Creative Problem Solving (CPS) model. While some similarities were identified, those models appear to be based on pre-1971 and 1980 versions of CPS and do not reflect the range of tools and the structure of the current model. Creative Problem Solving has undergone significant development since that time, thus it may be useful to explore what aspects of current versions of CPS can be incorporated into marital problem-solving models. This invites the examination of

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what aspects of CPS, as it is currently practiced, might be suitable for incorporation into current marital problem-solving models. This project examined that question and made recommendations for the use of CPS tools and methods in marital problem solving.

Questions for this Study

The following four questions were developed to guide the study.

1. In what ways are marital problem-solving models similar and dissimilar to the Creative Problem Solving (CPS) model?
2. What are the contingencies surrounding the use of marital problem-solving models and how do they compare to those of CPS?
3. What are the implications of the differences in structure and contingencies between marital problem-solving models and CPS?
4. In what ways might the marital problem-solving models be enhanced by the incorporation of elements of CPS?

Summary

There is little doubt that problem solving is an important skill for dyads in intimate personal relationships. There are, however, different models that are proposed for use by dyads. The identification or development of an enhanced problem solving process would be well used. There are a number of models in use today, each with their own characteristics that would imply distinct advantages and disadvantages. This study

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set out to examine the CPS problem solving model that has evolved within the field of the study of creativity, select models that have evolved with a perceived degree of independence within the field of marital therapy, and to identify opportunities for improvement.

Section 2: Review of Related Literature

Introduction

There appears to be little question that problem solving is an integral part of human activity. A review of the psychology and marital therapy literature revealed a number of problem-solving models that are prescribed in therapeutic and prevention modalities. The purpose of Section Two is to review the background literature on the role of problem solving in relationships and some of the models found in my review of this literature. Specifically, this review focused on four models that represent a cross-section of the models that were found.

Discussion

Background

Problems and conflict have been conceptualized as an inextricable part of married life and relationships (Peterson, 1983). The high US divorce rate, estimated to be 55% for first marriages and 65% for second marriages (U. S. Bureau of the Census, 1991), indicates that there is a certainly a need for change in the human conditions and processes that relate to marriage. The problems of marriage are winning more frequently than the marriage partners are. As Apfelbaum says (Wiley, 1981) "...troubled partners are only encountering more directly the issues that underlie everyone's relationships. The task of therapy is then to help them to work on whatever issues on the frontier of intimacy their problem represents" (p. ix).

Problem-solving skills have been identified as being important for successful relationships by a number of researchers (Baucom & Epstein, 1990; D'Zurilla & Goldfried 1971; Fitzpatrick, 1988; Gottman, 1994, 1998; Jacobsen, 1984; Hahlweg, Baucom, & Markman, 1988; Lloyd, 1990; Markman, Floyd, Stanley, & Storaasli, 1988; Pasch & Bradbury, 1998; Ruben, 1983; Stanley, Markman, & Blumberg, 1994). Markman, Floyd, Stanley, and Storaasli (1988), for example, reported on a three year longitudinal study that demonstrated a higher level of relationship satisfaction for couples who had received intervention emphasizing communication and problem-solving skills. Enhanced relationship stability has been further demonstrated in additional longitudinal studies of the Prevention and Relationship Enhancement Program (PREP) that includes problem-solving training (Markman, Floyd, Stanley, & Storaasli, 1988; Markman, Renick, Floyd, Stanley, & Clements, 1993). Geiss and O'Leary (1981) reported that therapists estimated that problem solving and decision-making are significant problems for over half of their therapeutic clients. Jacobson and Christensen (1996) proposed that traditional behavior therapy is not enough and that communication and problem-solving training are important elements of Integrative Couple Therapy. Jacobson and Margolin (1979) stated that systematic training is necessary in teaching couples to improve their problem-solving performance.

Problems are central to relationships and how they are handled by the couple can be used as a window into the relationship. Relationship *health* is often measured by using a staged problem-solving situation (Ball, Cowan & Cowan, 1995; Bradbury & Fincham, 1992; Markman, 1991; Upton & Jensen, 1991). In such a measure, the couple

is given a problem to solve. They are either directly observed or taped for later observation and the interaction is coded by trained observers. In other cases, self-report measures (Sabourin, Lapore, & Wright, 1990) are used to report the process for the staged problem solving or of routine problem solving. Gottman (1994) claimed a 90% success rate in predicting the long-term success or failure of a marriage based solely on the observation of behaviors during a problem-solving situation. This is rather compelling information in light of the promise of Behavior Marital Therapists of being able to modify these behaviors in many cases via training.

Models

In their seminal paper, D'Zurilla and Goldfried (1971) linked problem solving to "Behavior Modification." This work serves as a primary reference to problem-solving in the literature on behavior marital therapy. The authors suggested "...the goals of problem solving and behavior modification are one and the same, namely, to stimulate behavior which is likely to produce positive consequences..." (p. 109). The paper refers to Alex Osborn and the assistance of Sidney Parnes in the preparation of the paper and the methods that the authors developed. Osborn and Parnes are considered to be the founding fathers of Creative Problem Solving (CPS).

The D'Zurilla model, which consists of five steps: a) General Orientation; b) Problem Definition and Formulation; c) Generation of Alternatives; d) Decision Making; and e) Verification, is apparently derived from the 1966 version of CPS which consists of five stages, a) Fact-Finding; b) Problem-Finding; c) Idea-Finding; d) Solution-Finding; and e) Acceptance-Finding (Isaksen, 1995). The paper provides a general description of

how to clinically apply the model. It is interesting to note that D'Zurilla's work predates much of the work that established the ability to teach creativity and problem-solving so many of the opportunities for future research and verification of effectiveness suggested are the same as those of the early stages of the emergence of creativity as a discipline.

Other Behavior Marital Therapy (BMT) models follow the work of D'Zurilla. Another BMT model, attributed to Ridley by Farris and Avery (1980), is included in Table 1 in the context of both CPS and D'Zurilla. This eight-step model appears to relate to the five stage Noller, Parnes & Biondi model of CPS that appeared in 1976 (Isaksen, 1995). Lange and Van der Hart present a model similar to Ridley's as a treatment strategy in their book, *Directive Family Therapy* (1983) with attribution to D'Zurilla. Lester, Beckman, and Baucom (1980) presented a three-step BMT problem-solving model consisting of: a) selecting and stating a problem; b) listing possible alternative solutions; c) agreeing on a final solution. Ruben (1983) suggested a similar model for reducing stress in interpersonal problem solving. Jacobson and Margolin (1979) reference an early variation of these models.

Baucom and Epstein (1990) described a cognitive-behavioral marital therapy (CBMT) model for problem solving in their text *Cognitive-Behavioral Marital Therapy*. This model was more recently presented in the *Clinical Handbook of Marriage and Couples Interventions* (Halford & Markman, 1997) in the context of cognitive-behavioral couples therapy (CBCT).

To provide additional background and context for more detailed examination the BMT models of D'Zurilla and Goldfried and Farris and Avery are outlined along with the Baucom and Epstein CBMT model and CPS in Table 1.

Table 1. Comparison of Behavior Marital Therapy models of problem solving to CPS

Creative Problem Solving CPS (1) (1994)	Behavior Marital Therapy BMT (2) (1971)	Behavior Marital Therapy BMT (3) (1980)	Cognitive-Behavioral Marital Therapy CBMT (4) (1990)
TASK APPRAISAL	a) General Orientation		
COMPONENT ONE UNDERSTANDING THE PROBLEM MESS FINDING	b) Problem definition and formulation.	Step 1: Explore the problem area. Step 2: Define the problem in relationship terms. Step 3: Identify how each partner contributes to the problem. Step 4: State the relationship goal.	Step 1: Clearly and specifically state what the problem is. a.State inn terms of behavior. b.Break large, complex problems into several smaller problems and deal with one at a time. c. Agree to the problem statement.
DATA FINDING			
PROBLEM FINDING			
COMPONENT TWO GENERATING IDEAS IDEA FINDING	c) Generation of alternatives.	Step 5: Generate alternative solutions. Brainstorming	2. Discuss Possible Solutions Brainstorming
COMPONENT THREE PLANNING FOR ACTION SOLUTION FINDING	d) Decision making. e) Verification	Step 6: Select the best solution. Step 7: Implementation of the solution. Step 8: Evaluate progress.	3. Decide on a solution agreeable to both. 4. Decide on a trial period. a.Allow for several attempts. b.Review solution at end of trial period.
ACCEPTANCE FINDING			3. b. Do not accept an unacceptable solution. 3. c. Compromise if necessary.

Notes & References for Table 1:

1. Creative Problem Solving version 5.2 (1994) laid out in the linear format of 4.0 for ease of comparison (Isaksen, Dorval, & Treffinger, 1994). Underlines indicate the three major components beyond Task Appraisal and colors link the stages. Tools and methods are not included in the CPS summary for clarity.
2. (D'Zurilla & Goldfried, 1971)
3. (Farris & Avery, 1980)
4. (Baucom & Epstein, 1990)

The next model examined is the problem-solving model incorporated into the Preparation and Relationship Enhancement Program (PREP) (Markman, Stanley & Blumberg, 1996; Stanley, Markman & Blumberg, 1994). This model is in wide use today in the marital education field as prevention to future problems. This model is presented in Table 2.

Table 2. A comparison of the PREP model of problem solving to CPS

Creative Problem Solving CPS (1) (1994)	Prevention and Relationship Enhancement Program PREP (2) (1994)
TASK APPRAISAL	<i>Task Appraisal is not specifically Included:</i> In the prevention mode, this program is delivered by rote and does not include a specific task appraisal step. In the intervention mode, it is up to the therapist to consider the situation...then the program is presented in sequence.
COMPONENT ONE UNDERSTANDING THE PROBLEM MESS FINDING	COMPONENT ONE: Problem Discussion: This stage is accomplished using a Speaker/Listener communication technique which is designed to allow a clear and even exchange of information and feelings between the couple even under duress. It has one stage.
DATA FINDING	
PROBLEM FINDING	COMPONENT TWO: Problem Solution begins here with the identified problem stated in question form. This is the first of four stages and is called Agenda Setting.
COMPONENT TWO GENERATING IDEAS IDEA FINDING	The second stage is Brainstorming to find possible solutions.
COMPONENT THREE PLANNING FOR ACTION SOLUTION FINDING	The third stage: Agreement & Compromise consists of evaluating ideas jointly and developing specific solutions and actions. This would appear to incorporate the concept, without the CPS tools, of Acceptance Finding. The fourth stage: Follow-up involves setting near term milestones for checking the progress of the action plan. It is agreed that the plan can be adjusted at that time if necessary.
ACCEPTANCE FINDING	

Notes & References for Table 2:

1. Creative Problem Solving (CPS) version 5.2 laid out in the linear format of 4.0 for ease of comparison (Isaksen, Dorval, & Treffinger, 1994). Underlines indicate the three major components beyond Task Appraisal and colors link the stages. Tools and methods are not included in the CPS summary for clarity.
2. Prevention and Relationship Enhancement Program (PREP) (Stanley, et al., 1994).

Summary

Problem solving is a skill that is important to the well being of interpersonal relationships. Therapists and counselors are teaching problem-solving skills to pre-marital and married couples. Since D'Zurilla and Goldfried's 1971 paper, behavioral based problem solving models have shared the same roots as those of CPS. Each of these behavioral problem-solving models incorporates in its own way the three components of CPS (Understanding the Problem, Generating Ideas, and Planning for Action) in general terms. The details of the similarity and differences are examined and discussed in Section 4 where they are examined using the Process Mapping methodology described in Section 3.

Section 3: Methods

Introduction

This section details the type of information gathered and the methods of analysis that were used in this study. Literature reviews comprised the bulk of the information gathering. Identified models were selected for in-depth analysis based the abundance of published literature. It was taken that a sufficient amount of supporting literature indicated a degree of acceptance and use in the marital education and counseling fields. Process Mapping was used as the primary method for analyzing the models and developing the comparisons. This section includes discussions of Information Gathering, Data Analysis, Process Mapping, and Model Selection.

Information Gathering

Literature searches were conducted to identify problem-solving models that were being taught to individuals and couples to enhance their problem-solving abilities. Models were included on the basis of the number and strength of citations indicating a degree of acceptance and use. Accepted models included those targeted for both married and pre-marital couples for use in either a preventative or an intervention (therapeutic) mode.

In addition, the author was trained as a PREP presenter by its developers in July 1997 and has subsequently taught the program. This provided access to instructor's

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manuals that are not readily available outside of training and gave the author a working knowledge of this model.

Data AnalysisProcess Mapping

Data Analysis was conducted using a Process Mapping method. Process Mapping was used as the primary technique for comparing the selected models with CPS. CPS was chosen as the benchmark model not only to satisfy the questions posed by this project but also because it is, by far, the most complex of all the models examined. The objective of Process Mapping is to understand an existing operation (i.e. business or other human activity), understand the key implications of its structure and operation, and then make considered determinations for improvement.

Process Mapping as a technique for process analysis and diagnosis in operations management (Osborn, C., 1996) consists of three phases and ten activities. This process was adapted and modified for use in this study. Consideration was made for the fact that the interdependencies of each step are defined by the structure of the subject models. Diagnosis/analysis was directed toward the purpose and function of the individual elements. The original and adapted processes are outlined in Table 3.

Table 3. Process Mapping method outlines.

Process Mapping (Osborn, 1996)	Process Mapping as adapted for this study
1) Process Representation	1) Process Representation
a) Context-setting	a) Context-setting
b) Process decomposition	b) Process decomposition
2) Process Diagnosis	2) Process Diagnosis
a) Process specialization	a) Process specialization (identify function and purpose)
b) Analysis of explicit dependencies	
c) Dependency management analysis	b) Identify key contingencies
d) Trade-off analysis	
3) Process Innovation	3) Process Innovation
a) Identify implicit dependencies	a) Identify differences to CPS
b) Identify new coordination strategies	
c) Trade-off analysis	b) Trade-off analysis
d) Process redesign	c) Process recommendations

Each model was individually analyzed following the Process Mapping method.

The contextual use for the models as a whole was determined by reviewing the literature to identify the application recommendations for each model. Process decomposition was accomplished by breaking each model down into as many discrete elements as could be identified, determining their individual context within the model as a whole, and representing the findings in the form of process flow diagrams (PFD's). Flow charts are graphical representations of the model's structure and operation (i.e. decision points and process steps). These process flow diagrams were used as the foundation for process diagnosis and innovation.

Process Diagnosis was used to guide the examination of the contingencies around each model. Process Innovation was used to evaluate the potential for building a bridge between the subject models and CPS.

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In order to guide the trade-off analysis and process recommendation phases of the process innovation analysis criteria were selected for evaluation and decision making. . The following criteria were chosen on the basis of a logical review of the stated purposes of the models and the contexts in which they were taught and used. Simply stated the criteria questions are: 1.) Can it be taught?; 2.) Can people learn and use it?; and 3.) Does it work? The primary focus of this paper was to examine the first two criteria. The criteria and points for consideration are summarized in the following table.

Table 4. Criteria for Process Innovation Analysis

Criteria	Points for consideration
1. Can the model be taught in an acceptable amount of time?	<ul style="list-style-type: none"> ▪ Time required for training. (This may be a function of the complexity, number of elements, and clarity.
2. Is the model easy enough to use that it might be used effectively for some period of time after training?	<ul style="list-style-type: none"> ▪ Relative complexity ▪ Clarity of directions ▪ Expected personal comfort during use
3. Is the model effective?	<ul style="list-style-type: none"> ▪ Evidence in the literature that the efficacy of the model has been established for dyadic relationship problem solving.

Model Selection

A total of 5 models were identified in the literature review and were presented in Section 2. The primary distinction among these models relates to tools and techniques

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they use. Two models were selected for in-depth analysis: 1. CBMT as presented by Baucom, and 2. PREP.

The CBMT model was chosen primarily on the basis of its similarity to other behavioral models that were cited, and the availability of adequate descriptive information. In addition, the choice was made based on an initial structural review that indicated that it is more complex and more recent than the other behavioral modification models that were reviewed. Further, it represents problem solving in a therapeutic setting as it is used and taught in that context (Epstein, Baucom, & Daiuto, 1997).

The PREP problem-solving model was chosen based on the well-documented use and efficacy of PREP as a whole, as well as the fact that it is similar to that of BMT models number 2 and 3 presented in Figure 1. PREP was created primarily for prevention (Markman, Floyd, Stanley, & Storaasli, 1988; Markman, Stanley, & Blumberg, 1996) and represents a benchmark in that application.

Summary

Process Mapping was selected as the primary method of analysis of the problem-solving models that were identified through literature searches and other information gathering procedures. Process Mapping includes elements of representation, diagnosis, and innovation. Process mapping starts with methods for understanding the models and concludes with recommendations for improvement.

Section 4: Presentation and Analysis of Data

Introduction

The results of the Process Mapping analysis are presented for CPS, CBMT, and PREP problem solving models. The latter two models are compared and contrasted to CPS (chosen as the benchmark for this analysis) to set the stage for recommendations for their enhancement through the incorporation of CPS elements and methods. The models were analyzed and discussed in turn.

CPS Problem Solving Model Analysis

The Creative Problem Solving (CPS) model consists of three Components and six operating which are listed below. In addition, there are numerous tools and guidelines that allow this framework to operate as a flexible process.

- **Understanding the Problem**
 - ◆ Mess Finding
 - ◆ Data Finding
 - ◆ Problem Finding
- **Generating Ideas**
 - ◆ Idea Finding
- **Planning for Action**
 - ◆ Solution Finding
 - ◆ Acceptance Finding

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Where the model is entered and how much of it is used depends on the situation.

See Appendix A for an overview of CPS process flow. CPS may be used individually, by dyads, or in groups.

CPS Process Representation

The global context for CPS is very broad in the sense that it may be used to solve or at least address almost any type of problem in almost any context. Circumstances where CPS is most productive include the following elements: a) Interest - the person or people who want the outcome of the process (clients) are interested and motivated to proceed.; b) Influence -the clients are in a position to take action based on the outcome of the session.; and c) Newness or novelty - there is a need for a new or different outcome. CPS is used, for example, to solve problems, bring clarity to messy situations, develop action plans, and create new products or outcomes.

Group application generally requires the use of a trained process facilitator. Individual or dyadic use may be self-facilitating as long as at least one person is trained.

The text description of the model as presented by Isaksen, Dorval, and Treffinger (1994) was converted into process flow diagrams using the method discussed in Section 3. These diagrams, presented in Appendix A, are a visual representation of each fundamental model element (i.e. step, operation, or guideline) within their proper context inside the model.

CPS Process Diagnosis

Table 5 presents a summary of the function, purpose, and contingencies for the four primary steps and various sub-elements of the CPS model. This work incorporates elements of and builds on the operation analysis - phase analysis of CPS conducted by Mance (1996) that summarizes the purpose for each component and phase of CPS. This process diagnosis is used as the foundation for process innovation in the next step of the Process Mapping procedure.

Table 5. Process diagnosis for the CPS model

Step/Operation	Function & Purpose	Contingencies
Task Appraisal	Gather information to determine if CPS is an appropriate method to use for the task.	<ul style="list-style-type: none"> ▪ A trained facilitator or participant, in the case of dyadic or group use, will interview the client to determine the nature of the problem and the applicability of CPS. ▪ The interviewer should determine if the clients are interested in solving the problem, have influence over the situation, and are willing to accept newness or novelty in the solution. ▪ This requires a working knowledge of the process.
Preparing for CPS	Decide: where to enter the process, which tools might be used, who to involve, and how to manage the process.	<ul style="list-style-type: none"> ▪ This requires a working knowledge of the process.

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Step/Operation	Function & Purpose	Contingencies
Divergent Guidelines	<p>Ensure that evaluation is suspended during this phase of the process.</p> <p>Guidelines:</p> <ul style="list-style-type: none"> ▪ Defer judgment ▪ Strive for quantity ▪ Freewheel - strive for uniqueness or originality ▪ Seek combinations 	<ul style="list-style-type: none"> ▪ The suspension of judgment during divergence is essential to the operation of the model. ▪ Either affirmative or negative judgment will slow or stop the generation process. ▪ Pushing the boundaries by freewheeling opens up new opportunities. ▪ Combinations may be better than the original thought.
Convergent Guidelines	<p>Ensure evaluation is used affirmatively and effectively. Convergent guidelines:</p> <ul style="list-style-type: none"> ▪ Use affirmative judgment ▪ Be deliberate ▪ Consider novelty ▪ Stay on course 	<ul style="list-style-type: none"> ▪ The use of affirmative, deliberate judgment while considering novelty is essential to the inclusion of creativity (newness). Staying on course is essential to reaching the objective.
Invitational Stems	<p>Invitational stems (see notes on CPS process flow diagram in Appendix B) are used to invite the flow of information.</p>	<ul style="list-style-type: none"> ▪ Stems are an integral part of the process as they serve to invite participation in a positive way.
Component: Understanding the Problem.	<p>Generate clearly defined problem or problems from a general or ill-defined situation.</p>	<ul style="list-style-type: none"> ▪ Not necessary if the problem is already well understood and can be clearly stated. Or the process may be entered at any operation as appropriate to refine the problem. ▪ Serves to ensure that the "right" problems are identified and worked on.

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Step/Operation	Function & Purpose	Contingencies
		<ul style="list-style-type: none"> ▪ All phases use divergent and then convergent tools. See the process flow notes in Appendix A for a listing of tools and their applications.
<p>Operation: Mess Finding *Note in contingencies.</p>	<p>Investigate the situation at a general level to develop a focus for problem solving.</p>	<ul style="list-style-type: none"> ▪ * Each operation in CPS requires that the facilitator/leader choose divergent tools, convergent tools, and invitational stems as appropriate. <i>This is intrinsic to the process and, for the sake of simplicity, is not detailed here at every step.</i> ▪ Divergent and convergent tool choices are made, as in other operations, on the basis of the nature of the situation and the people involved.
<p>Phase 1. Diverge:</p>	<p>Develop challenges and opportunities for Creative Problem Solving.</p>	<ul style="list-style-type: none"> ▪ See note in Mess Finding contingencies.
<p>Phase 2. Converge:</p>	<p>Compress to a statement of a chosen direction to pursue.</p>	<ul style="list-style-type: none"> ▪ See note in Mess Finding contingencies.
<p>Operation: Data Finding</p>	<p>Develop a clear understanding of the current situation by examining background information.</p>	<ul style="list-style-type: none"> ▪ As for other phases.
<p>Phase 1. Diverge:</p>	<p>Generate a variety of related data.</p>	<ul style="list-style-type: none"> ▪ See note in Mess Finding contingencies.
<p>Phase 2. Converge:</p>	<p>Compress to identify the key data.</p>	<ul style="list-style-type: none"> ▪ See note in Mess Finding contingencies.

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Step/Operation	Function & Purpose	Contingencies
Operation: Problem Finding	Develop clear problem statement(s) for idea generation.	<ul style="list-style-type: none"> ▪ As for other phases.
Phase 1. Diverge:	Diverge to explore the problem area through the generation of a variety of problem statements.	<ul style="list-style-type: none"> ▪ See note in Mess Finding contingencies.
Phase 2. Converge:	Converge to narrow and identify specific problem statements.	<ul style="list-style-type: none"> ▪ See note in Mess Finding contingencies.
Component: Generating Ideas.	To explore many varied, and unusual ideas to select promising ideas for potential action.	<ul style="list-style-type: none"> ▪ If the problem is well understood and there is an adequate supply of ideas, this component and operation may be skipped. ▪ The degree of variety and novelty sought is situational dependent. ▪ The process is designed to overcome blocks and barriers to new or novel ideas.
Operation: Generating Ideas.	Generate and select ideas that may be further developed into solutions.	<ul style="list-style-type: none"> ▪ As for other phases.
Phase 1. Diverge:	Diverge to generate many, varied, and unusual ideas.	<ul style="list-style-type: none"> ▪ As for other phases.
Phase 2. Diverge	Converge to sort and select promising ideas.	<ul style="list-style-type: none"> ▪ As for other phases.
Component: Planning for Action	Transform ideas into action.	<ul style="list-style-type: none"> ▪ The process may be entered at operation 1 or 2 depending on how well the solution is already developed. If a solution has been identified, skip operation 1 and enter at operation 2, Acceptance Finding.

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Step/Operation	Function & Purpose	Contingencies
Operation 1. Solution Finding	To Refine, develop and strengthen promising solutions.	<ul style="list-style-type: none"> ▪ The approach is to find ways to make promising solutions work. Obstacles are treated as challenges and systematically addressed.
Phase 1. Diverge:	To generate criteria to evaluate strength, weakness, novelty; or establish relative importance.	<ul style="list-style-type: none"> ▪ As for other phases.
Phase 2. Converge:	Select and apply criteria to evaluate, strength, weakness, consider novelty, or to establish relative importance. To overcome limitations, develop and refine promising solutions.	<ul style="list-style-type: none"> ▪ As for other phases.
Operation 2. Acceptance Finding	To develop explicit plans for implementation.	<ul style="list-style-type: none"> ▪ Planning is based on the investigation and recognition of those people and circumstances that might assist or resist the application of the solution. Assistance is sought and resistance is overcome.
Phase 1. Diverge:	Explore a variety of sources of assistance and resistance to generate a variety of action steps.	<ul style="list-style-type: none"> ▪ As for other phases.
Phase 2. Converge:	<p>To select and schedule specific action steps.</p> <p>Includes near term actions, trial periods, and checks to ensure a satisfactory conclusion.</p>	<ul style="list-style-type: none"> ▪ As for other phases. ▪ Reenter process as appropriate if the outcome is not satisfactory.

CBMT Problem Solving Model Analysis

The cognitive-behavioral marital therapy (CBMT) model for problem solving consists of four steps:

1. Clearly and specifically state the problem.
2. Discuss possible solutions.
3. Decide on a solution.
4. Implement.

The model is presented as a skill set that can be taught to and practiced by couples.

CBMT Process Representation

The global context is that of therapy and/or skills education. The sub-context is that of a wider program that includes communication-skills training (Baucom & Epstein, 1990; Halford & Markman, 1997).

The text description of the model was converted into process flow diagrams using the method discussed in Section 3. These diagrams, presented in Appendix D, are a visual representation of each fundamental model element (i.e. step, operation, or guideline) within their proper context inside the model. They are the foundation for the process diagnosis. Contingencies were found in the referenced literature and were identified by examination.

CBMT Process Diagnosis

The following table summarizes the process element function and purpose, and contingencies for the four primary steps and various sub-elements of the CBMT model.

Table 6. Process diagnosis for the CBMT model.

Step/Operation	Function & Purpose	Contingencies
Communication training and guidelines	<p>Communication skills are essential to the successful use of a problem-solving model.</p> <p>The problem-solving model is apparently not taught outside this context.</p>	<ul style="list-style-type: none"> ▪ A less than ideal relationship may exist. There may be issues surrounding such things as trust, openness, history, and power. ▪ This establishes guidelines for communication and decision-making in an accurate, non-critical manner.
General		<ul style="list-style-type: none"> ▪ Compromise is offered as an alternative at each stage for solution acceptance.
Step 1. Statement of the Problem.	Develop a problem statement that the couple is willing to address in the next step.	<ul style="list-style-type: none"> ▪ Discussion is provided as the tool. ▪ Roadblocks may require therapist intervention.
General guidelines.	Three guidelines are provided to 1. focus on the problem, 2. define it in satisfactory terms, and 3. mandate agreement.	<ul style="list-style-type: none"> ▪ It is not clear how the guidelines are to be followed except by demonstration and/or instruction by the teacher.
Check of satisfactory statement.	Ensure that the problem conforms to the general guidelines	<ul style="list-style-type: none"> ▪ Assumes self-guidance of the participants or intervention by the therapist.

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Step/Operation	Function & Purpose	Contingencies
Step 2. Consider Alternative Solutions.	Generate solution options for consideration.	<ul style="list-style-type: none"> ▪ Two methods (tools) are proposed. ▪ One method (one party proposes a solution) is said to be natural but it is recognized that the other party may find acceptance difficult. ▪ Brainstorming is proposed as the other method.
General guidelines	Keep the focus on being solution-oriented for the future.	<ul style="list-style-type: none"> ▪ Assumes self-guidance of the participants or intervention by the therapist.
Brainstorming guidelines	Encourage the generation of numerous alternatives, suspend judgment or evaluation, and include creative ideas.	<ul style="list-style-type: none"> ▪ Assumes self-guidance of the participants or intervention by the therapist.
Step 3. Decide on a solution.	Agree on a solution that is acceptable to both or is, at the least, a tolerable compromise.	<ul style="list-style-type: none"> ▪ Assumes self-guidance of the participants or intervention by the therapist.
Review method when one party proposes a solution.	Test the proposal for acceptability or possible compromise.	<ul style="list-style-type: none"> ▪ Discussion is suggested as the means of review.
General guidelines	Encourage that neither party accept an unacceptable solution, suggest compromise if needed, and ensure that the solution is stated properly.	<ul style="list-style-type: none"> ▪ This sets a safety boundary for not accepting an unsatisfactory solution. There is, however, no guarantee against one giving in.
Brainstorming guidelines	Three guidelines are: <ul style="list-style-type: none"> ▪ List numerous alternatives ▪ Include creative idea ▪ Withhold evaluation 	<ul style="list-style-type: none"> ▪ There is a sense of semi-independent idea generation, as the suggestion to build on each other's ideas is not made although that may be implicit in compromise.

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Step/Operation	Function & Purpose	Contingencies
Choose evaluation/ decision method.	Make a selection of which method to use.	<ul style="list-style-type: none"> ▪ No guidelines are given for making the choice.
Decide: One party is granted decision-making power	Reach a decision by one party that is agreeable to both.	<ul style="list-style-type: none"> ▪ This assumes agreement on a grant of authority to one party on a particular issue. ▪ Communication is the method suggested for deciding that grant.
Decide: Both parties rate importance to self and the higher rating decides.	Reach a decision by one party that is agreeable to both. A rating scale of 1 to 10, with 10 being most important is suggested.	<ul style="list-style-type: none"> ▪ Relies on honesty and trust that both parties are making fair and appropriate ratings.
Decide: Parties agree to a trade-off under an informal quid pro quo system.		<ul style="list-style-type: none"> ▪ Requires trust. ▪ Failure may indicate the need for a more formal system such as behavioral contracting.
Restate solution and review acceptability.	Ensure that the solution: <ul style="list-style-type: none"> ▪ is understood ▪ addresses the problem ▪ does not have hidden contingencies that might make it unacceptable 	<ul style="list-style-type: none"> ▪ Discussion is the method suggested for ensuring that the solution is acceptable.
Step 4. Adopt a Final Solution.	Get action underway. Establish checkpoints in the near-term to ensure that the solution is working.	<ul style="list-style-type: none"> ▪ Assumes that the participants have been able to agree on a solution that they will support to some extent.
General Guidelines	Allow for several attempts of the new solution and review acceptability at the end of the period.	<ul style="list-style-type: none"> ▪ The individuals determine acceptability. No criteria are established.
Evaluate performance and acceptability.	Provides a checkpoint to reevaluate whether or not the solution is being carried out and remains acceptable.	<ul style="list-style-type: none"> ▪ The prospect of a trial period may allow couples to be more flexible and compromising in their solutions.

CBMT Process Innovation

Process innovation explores the opportunity for enhancement to the subject process. Its steps include identifying the differences between the benchmark model (CPS) and the subject model, performing a trade-off analysis, and concluding with process recommendations.

Identify differences between CBMT and CPS.

The first phase of process innovation is the identification of differences. The previously presented results of the process diagnosis (process function and purpose & key contingencies) are used here to compare the CBMT model relative to the CPS model. The results of that comparison are presented in the following table.

Table 7. A comparison of CBMT to the CPS model

A comparison of CBMT to the CPS model
Model function and purpose: Similarities
<ul style="list-style-type: none"> ▪ Both models are used to solve problems. ▪ Both use a number of divergent and convergent tools and techniques. ▪ Both models rely on guidelines. ▪ Both models include components/steps to develop a definition/statement of the problem, consider alternative solutions, select solutions, and end with an action plan.
Model function and purpose: Differences
<ul style="list-style-type: none"> ▪ The stated purpose of CBMT is to solve behavioral problems in a dyad. CPS may be used in many other ways and contexts. ▪ CBMT with only 4 steps is much less complex than CPS that has 3 components, 6 stages, and 2 phases (divergence and convergence) within each stage. CPS

A comparison of CBMT to the CPS model
<p>includes additional processes designed to thoroughly examine the problem, the alternatives, and how to implement an effective plan.</p> <ul style="list-style-type: none"> ▪ The CBMT process is conducted in a linear manner from start to finish rather than entering the process at any appropriate place as the flexibility of CPS allows.
<p>Contingencies: Similarities</p>
<ul style="list-style-type: none"> ▪ Both models require training for effective use. ▪ Both may be self-facilitated or facilitated by another. ▪ The balanced application of judgment is expected in both models. ▪ Both models make de facto recognition, in their guidelines and structure, of the need to manage the human environment for effective problem solving.
<p>Contingencies: Differences</p>
<ul style="list-style-type: none"> ▪ The CBMT facilitator/trainer is often a therapist who is involved in content. A CPS facilitator/trainer is not. ▪ CBMT involves 4+ hours of training compared to 30+ hours for CPS. ▪ The model is dependent on the incorporation and successful use of the communication guidelines to maintain a balance in judgment, to ensure that the environment is tolerable, and the process is followed. A focus is on a concern that the participants not be too critical of each other and thus disrupt the communications. The structure, in some respects, is not as detailed or tight as CPS. The model is apparently not taught without the communication training. ▪ CBMT starts with an expectation that the dyad will develop a statement of the problem but there are no tools provided other than the process of discussion. CPS provides the means for understanding and developing problem statements in the form of tools and guidelines. <i>This is the first of a repetitive occurrence in CBMT of explaining what is expected but not providing the how.</i> ▪ CBMT does not formalize divergent and convergent operations to the degree and clarity that CPS does. ▪ The divergent guidelines for Brainstorming in CBMT do not include a recommendation to seek combinations as is made in CPS. ▪ CBMT does not make use of invitational stems that are widely used in CPS. ▪ CPS offers a wide variety of tools for use in divergence in convergence whereas CBMT uses very few. CBMT proposes only Brainstorming and unilateral individual suggestion for considering alternative solutions. Only the former is a truly dyadic divergent activity. ▪ The decision making process (convergence) in deciding on a solution in CBMT is unstructured relative to CPS where tools are abundant. CBMT relies on unilateral decision making, a quid pro quo trade-off, or a simple rating system. The rating system proposes no method for developing and agreeing to criteria but relies instead on honesty and trust that both parties are making fair and appropriate ratings. ▪ Discussion, in the context of loose guidelines, is given as a primary means of making decisions in CBMT. CPS provides tools.

A comparison of CBMT to the CPS model
<ul style="list-style-type: none"> ▪ No tools are provided to assist the CBMT model user to develop criteria for evaluating the performance and acceptability of the final solution. CPS includes tools. ▪ CBMT does not include steps for finding people who will assist or resist in the solution and develop ways to ensure success in implementation. Nor does it identify other sources of assistance or resistance and address them in the same manner. ▪ CBMT does not include methods to assist in refining ideas such as the ALUo (Advantages, Limitations, and Unique Opportunities) tool used in CPS.

The foregoing analysis identified significant differences between the CBMT and CPS models. While similar in intent, the CBMT model is less sophisticated in both structure and form than CPS. Despite the relative simplicity of the CBMT model (e.g. fewer processes, tools, guidelines, and the use of linear flow) it may be more difficult to maintain in an unsupervised dyadic application because of its relative lack of structure and tools. The contingencies clearly include a need for honesty and trust between the parties and yet there is little, beyond the influence of the therapist, to engender that environment. In fairness, it must be noted that any model no matter how sophisticated, as CPS might be depends on the good will of the involved parties. Complexity and sophistication are elements that must be recognized in the trade-off analysis that follows.

CBMT Trade-off Analysis

The following table summarizes the advantages and disadvantages that might be associated with the CBMT model relative to CPS. Trade-off points are discussed in the context of the criteria for process innovation analysis: 1. Can it be taught?; 2. Can people

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learn and use it?; and 3. Does it work? These criteria are presented in more detail in table

4. Arguments are offered to counter the disadvantages.

Table 8. Trade-off analysis of CBMT relative to CPS

Advantage	Disadvantage (Trade-off)
<i>Observation: Relative simplicity of CBMT</i>	
<ul style="list-style-type: none"> ▪ Simplicity might indicate a relative ease in both teaching and learning. CPS introductory courses run four to five days 	<ul style="list-style-type: none"> ▪ The lack of detail in some key areas such as the guidelines may leave room for misunderstanding or misapplication. ▪ Increasing the detail or complexity of the model may increase the amount of time required to teach it. <p>The argument may be made, however, that in light of the fact that the Prevention and Relationship Enhancement Program (PREP) devotes 2 to 4 hours to communication and problem solving, there is room for refining the CBMT model without becoming so complex as to demand an inordinate amount of training time (Markman, et al., 1996). One must consider all of the time associated with the problem and not just that devoted to teaching a process that may be expected, as any human endeavor, to work less than perfectly.</p>

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<i>Observation: CBMT Step 1. Statement of the Problem, is very simplistic.</i>	
Advantage	Disadvantage (Trade-off)
<ul style="list-style-type: none"> ▪ The only requirement is that the problem be stated in behavioral terms; that large, complex problems are broken down; and that both people agree on the problem statement and are willing to discuss it. 	<ul style="list-style-type: none"> ▪ This presupposes that the identified problem is truly the problem and no attempt is made to ensure that is the case. The tradeoff for expanding and/or refining this step might come in a reduction of time required overall or a solution to a more clearly defined and articulated problem. This might reduce tension and enhance the outcome. <ul style="list-style-type: none"> Practical experience with CPS indicates that understanding the problem is often an important aspect of problem solving. Further, experience with the somewhat simpler PREP model (Stanley et al., 1994) indicates that 80% of couple's problems don't have to be solved but just talked through and understood by both parties.
<i>Observation: Step 2. Consider Alternative Solutions, includes only two methods (tools) for accomplishing this step.</i>	
<ul style="list-style-type: none"> ▪ A relatively small number of choices that have to be made would infer ease of use. 	<ul style="list-style-type: none"> ▪ One tool consists of one party proposing a solution and the other judging it. This incorporates no structure beyond the guidelines and, while more natural, may be no more effective than an unaided problem solving method. <ul style="list-style-type: none"> This method might be best modified to include the proviso that little weight be placed on its outcome unless it is readily accepted. A favorable answer could lead on quickly and an unacceptable answer could be directed toward Brainstorming. ▪ Brainstorming is best done with all of the CPS guidelines intact. <ul style="list-style-type: none"> The addition of the fourth divergent guideline (seek combinations) would not appear to have a significant negative impact on the process.

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<i>Observation: Step 2. Consider Alternative Solutions, includes no convergent tools beyond those of 'choice.'</i>	
Advantage	Disadvantage (Trade-off)
<ul style="list-style-type: none"> ▪ Convergent tools are not as detailed as CPS. They are primarily a matter of choice which the authors' characterize as natural in nature (Baucom & Epstein, 1990) 	<ul style="list-style-type: none"> ▪ The lack of tools only makes it more difficult to focus on the problem and converge on solutions. <p>One might argue that the additional complexity actually simplifies the use of the model as a whole. One might expect reduced tension and a better outcome.</p>
<i>Observation: Step 3. Decide on a Solution, incorporates neither divergent nor convergent tools.</i>	
<ul style="list-style-type: none"> ▪ See the discussion relative to simplicity in the first observation. 	<ul style="list-style-type: none"> ▪ See the discussion relative to simplicity in the first observation and the continuing points made relative to the benefits of tools.
<i>Observation: Step 4. Adopt a Final Solution: incorporates neither tools nor the CPS divergent and convergent guidelines.</i>	
<ul style="list-style-type: none"> ▪ See the discussion relative to simplicity in the first observation. 	<ul style="list-style-type: none"> ▪ See the discussion relative to simplicity in the first observation and the continuing points made relative to the benefits of tools.

Themes that are identified here are the relative simplicity of CBMT to CPS and the concern that the structure might benefit from additional tools and methods as well as the elimination of some existing elements. The analysis is continued in Section 5 with recommendations for the modification of the CBMT model.

PREP Problem Solving Model Analysis

The Prevention and Relationship Enhancement Program (PREP) (Markman, Stanley, & Blumberg, 1996) includes problem solving in a skill-based education program that includes the following presentation topics:

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- 1) Foundation and danger signs
- 2) Safety, structure, and communication (Speaker/Listener technique and guidelines)
- 3) Filters (role in communication)
- 4) Negative communication, anger, and raising concerns constructively
- 5) Problem solving
- 6) Expectations
- 7) Fun
- 8) Ground rules
- 9) Issues and events
- 10) Core belief systems
- 11) Friendship
- 12) The sensual/sexual relationship
- 13) Forgiveness
- 14) Commitment

Context: A primary purpose of the program is to teach communication, problem solving, and other relationship skills that a couple may use to prevent problems, solve problems, and enrich their relationship with positive activities. The target audience is engaged or married couples with low to moderate relationship stress and moderate to high relationship satisfaction. It is typically delivered in a workshop setting although more highly stressed couples may elect to have private lessons with a therapist or teacher. Trained facilitators are teaching PREP around the world in a number of settings (i.e. churches, military installations, and private practice).

PREP Process Representation

PREP assumes that all couples will encounter problems, it is best to handle problems as a team, and quick solutions are not lasting solutions. The PREP problem-solving model, designed to address the foregoing, includes two steps that are summarized

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here and are presented in more detail in a process flow diagram in Appendix F and notes in Appendix G.

1. **Problem Discussion:** The problem is discussed using the Speaker/Listener technique using the following ground rules. Once the discussion has progressed to the point that there is clarity around a specific problem, the process may be taken to the solution phase.
2. **Problem Solution:** The solution phase includes three steps.
 - 1) *Agenda Setting:* Select a specific problem to be solved.
 - 2) *Brainstorming:*
 - 3) *Agreement and Compromise*

Problem Discussion may begin before a specific problem is identified and taken forward for solution. The assumption is that as the couple talks about an issue or issues using the Speaker/Listener technique, a specific issue may be identified as one that is appropriate for problem solving. That issue is then set on the agenda and the problem solving process goes forward while continuing to use the Speaker/Listener technique for communication.

PREP Process Diagnosis

The following table summarizes the process element function and purpose, and contingencies for the two primary steps and four sub-elements of the PREP model. This

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process diagnosis is used as the foundation for process innovation in the next step of the

Process Mapping procedure.

Table 9. Process diagnosis for the PREP model

Step/Operation	Function & Purpose	Contingencies
Problem Discussion	<p>Have a discussion using the Speaker/Listener technique to ensure that negative affect is minimized and positive affect and understanding are maximized. The net desired result is clarity around the situation and, as needed, a problem statement that can be addressed in the problem-solving component.</p> <p>A good discussion should leave the participants feeling heard and validated independent of the level of agreement or disagreement.</p>	<ul style="list-style-type: none"> ▪ Speaker/Listener is a structured communication method that is not observed to naturally occur in untrained dyads. Participants need to be well practiced and comfortable with the method in order to be able to use it under the conditions of stress that might surround a couple's issues. ▪ The couple is encouraged to address the issues as though they are on the same team. They are to seek the same goal, respect the rules, and respect each other. ▪ PREP developers have observed that some 60 to 80% of all problems do not have to be solved; they just need to be discussed for an understanding reached. ▪ The couple is encouraged by the guidelines to stick to one subject.

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Step/Operation	Function & Purpose	Contingencies
Problem Solution	Develop solutions for problems that have been identified in discussion.	<ul style="list-style-type: none"> ▪ The assumption is made that a problem has been clearly enough identified in discussion to enable problem solving to successfully continue. ▪ Two stems are offered.
Agenda Setting	<p>Decide on which piece of the problem to work on right now.</p> <p>Plan to work on other pieces of the problem another time.</p>	<ul style="list-style-type: none"> ▪ Convergence is suggested by encouraging the couple to focus in and narrow down concerns as an umbrella narrows from its canopy to its handle. ▪ A stem is suggested. "What do we want to do about (the issue) during (a time frame)?"
Brainstorming	Create and identify as many solutions as possible.	<ul style="list-style-type: none"> ▪ Brainstorming with a recorder is the suggested tool. ▪ Novelty is encouraged. "Get loose and creative."
Agreement and Compromise	Develop a solution or solutions that both parties are satisfied with.	<ul style="list-style-type: none"> ▪ The tool of listing the pros and cons of different proposals is the only tool recommended as a means of convergence. ▪ Compromise (as cooperation rather than capitulation) is suggested as a means of developing new solutions.
Follow-up	Agree on solution(s) to be tried, summarize them, and agree on a time frame to ensure the solutions are working.	<ul style="list-style-type: none"> ▪ Immediate action is recommended so the process doesn't lose momentum.

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Step/Operation	Function & Purpose	Contingencies
	If the process is not working, loop back to Problem Discussion.	<ul style="list-style-type: none"> ▪ If the process is not working it might be due to the couple not working as a team or there are still hidden issues.

PREP problem solving relies on a relatively simple linear model, the structure of the Speaker/Listener communication method, and the guideline that the dyad is to work as a team. The broader context of the entire PREP course provides a broader base.

PREP Process Innovation

Process innovation explores the opportunity for enhancement to the subject process. Its steps include identifying the differences between the benchmark model (CPS) and the subject model (PREP), performing a trade-off analysis, and concluding with process recommendations.

Identify differences between PREP and CPS.

The first phase of process innovation is the identification of differences. The previously presented results of the process diagnosis (process function and purpose & key contingencies) are used here to compare the PREP model relative to the CPS model. The results of that comparison are presented in the following table.

Table 10. A comparison of PREP to the CPS model

A comparison of PREP to the CPS model
Model function and purpose: Similarities
<ul style="list-style-type: none"> ▪ Both models are used to solve problems. ▪ Both models include components/steps to develop a definition/statement of the problem, consider alternative solutions, select solutions, and end with an action plan. ▪ Both rely on understanding the problem to some degree as an initial step. ▪ Both models rely on guidelines to form and maintain the process and environment. ▪ Divergent guidelines are used by both to some degree. ▪ Both use invitational stems to some extent. ▪ PREP uses Brainstorming and its divergent guidelines, as does CPS.
Model function and purpose: Differences
<ul style="list-style-type: none"> ▪ The stated purpose of PREP is to solve problems in a dyad. CPS may be used in many other ways and contexts. ▪ PREP with 2 components 4 steps is much less complex than CPS that has 3 components, 6 stages, and 2 phases (divergence and convergence) within each stage. CPS includes additional processes designed to thoroughly examine the problem, the alternatives, and how to implement an effective plan. ▪ The PREP process is conducted in a linear manner from start to finish rather than entering the process at any appropriate place as the flexibility of CPS allows. ▪ It is explicit within the flexible structure of CPS that if the process is not working at any time the facilitator may reenter the process at another point. PREP explicitly speaks to this only in the Select Trial Period step when it suggests that if the process is bogged down a return to Problem Discussion is indicated.
Contingencies: Similarities
<ul style="list-style-type: none"> ▪ Both models require training for effective use. ▪ Both may be self-facilitated or facilitated by another. ▪ The balanced application of judgment is expected in both models. ▪ Both models make de facto recognition, in their guidelines and structure, of the need to manage the human environment for effective problem solving.
Contingencies: Differences
<ul style="list-style-type: none"> ▪ CPS requires much more training (about 10 times more) than the 2 to 4 hours allotted for the communication and problem solving training of PREP. ▪ Both parties of the dyad must be trained for the process to be used effectively without an additional facilitator. ▪ PREP uses the Speaker/Listener communication technique as the primary mode of communication during use. CPS uses natural communication that is directed by the guidelines. ▪ PREP is a linear process where CPS may be entered at any component or phase as appropriate. ▪ PREP uses the team metaphor to encourage the dyad to cooperate. Both members of the dyad are clients with a vested interest in the outcome. CPS recognizes

A comparison of PREP to the CPS model

different roles for participants such as client and resource group. Cooperation and participation is important but the resource group may be less vested in the problem and the outcome than the client.

- PREP uses discussion as the only method (tool) for understanding the problem in Problem Discussion versus the number of tools and processes that are available to CPS.
- Brainstorming is the only divergent tool used by PREP in Problem Solution. CPS has a number of tools available.
- PREP identifies only two invitational stems versus the broad range available in CPS.
- The only convergent tool/method used by PREP in the Problem Discussion component is Agreement and Compromise. This is relatively unstructured relative to the number of tools used by CPS.
- The only convergent tool/method used by PREP in the Agreement and Compromise step of the Problem Solution component is that of identifying the pros and cons for the solution ideas that have been generated. This is relatively unstructured relative to the number of tools used by CPS.

The foregoing analysis identified significant differences between the PREP and CPS models. While similar in intent, the PREP model is less sophisticated in both structure and form than CPS. Despite the relative simplicity of the PREP model (e.g. fewer processes, tools, guidelines, and the use of linear flow) it may be more difficult to maintain in an unsupervised dyadic application because of its relative lack of structure and tools. The contingencies clearly include the need for the dyad to work as a team. In fairness, it must be noted that any model no matter how sophisticated, as CPS might be depends on the good will of the involved parties. Complexity and sophistication are elements that must be recognized in the trade-off analysis that follows.

PREP Trade-off Analysis

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The following table summarizes the advantages and disadvantages that might be associated with the PREP model relative to CPS. Trade-off points are discussed in the context of the criteria for process innovation analysis: 1. Can it be taught?; 2. Can people learn and use it?; and 3. Does it work? (The criteria are presented in more detail in table 4.) Arguments are offered to counter the disadvantages.

Table 11. Trade-off analysis of PREP relative to CPS

Advantage	Disadvantage (Trade-off)
<i>Observation: Relative simplicity of PREP</i>	
<ul style="list-style-type: none"> ▪ Simplicity might indicate a relative ease in both teaching and learning. CPS introductory courses run four to five days where the communication and problem solving elements of PREP may be presented in two to four hours depending on the teaching model used. 	<ul style="list-style-type: none"> ▪ The relative lack of tools and detail means that there may be inadequate support and guidance when roadblocks are reached due to problems in the relationship environment or complexity in the issues themselves. ▪ Increasing the detail or complexity of the model may increase the amount of time required to teach it. <p style="margin-left: 20px;">The argument may be made, however, that in light of the fact that the Prevention and Relationship Enhancement Program (PREP) devotes about 2 to 4 hours to communication and problem solving, there is room for refining the model without becoming so complex as to demand an inordinate amount of training time (Markman, et al., 1996). One must consider all of the time associated with the problem and not just that devoted to teaching a process that may be expected, as any human endeavor, to work less than perfectly.</p>
<i>Observation: PREP Component 1. Problem Discussion, is very simplistic.</i>	

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Advantage	Disadvantage (Trade-off)
<ul style="list-style-type: none"> ▪ The expectation is that the problem will be thoroughly discussed until both parties feel that they have been understood and validated. An advantage of this approach is that the majority of problems or issues that are brought into this component (60 to 80%) do not have to be solved (Stanley, et al., 1994). Discussion alone is adequate to resolve the matter in most of the cases. 	<ul style="list-style-type: none"> ▪ Practical experience with CPS indicates that understanding the problem is often an important aspect of problem solving. PREP does not include the breadth of tools that CPS does and the disadvantage is that time and energy might be wasted by the dyad in trying to sort things out. <p>The tradeoff for expanding and/or refining this step might come in a reduction of time required overall or a solution to a more clearly defined and articulated problem. This might reduce tension and enhance the outcome.</p>
<p><i>Observation: The PREP process uses at least two invitational stems.</i></p>	
<ul style="list-style-type: none"> ▪ The small number selection might infer ease of use. ▪ One stem, "What are we going to do to protect the rest of what is great about our relationship from this seemingly unsolvable problem?" serves to bring the focus back to the issue at hand and invite cooperation toward a mutual goal. ▪ The other stem, "What do we want to do about (the problem) during (the time frame)?" invites cooperation and progress during the Agreement and Compromise and Follow-up steps. 	<ul style="list-style-type: none"> ▪ The small selection precludes the possible benefit of additional stems. The first stem is primarily indicated for use in cases of impasse. <p>One will want to balance the amount of complexity (e.g. additional stems) against potential benefit of better solutions with less time and energy spent. It might be helpful to have stems for each step of the process to reduce the possibility of impasse.</p>
<p><i>Observation: Convergent tools are not as detailed as CPS.</i></p>	
<ul style="list-style-type: none"> ▪ See the discussion relative to simplicity in the first observation. 	<ul style="list-style-type: none"> ▪ The lack of tools only makes it more difficult to focus on the problem and converge on solutions. <p>One might argue that the additional complexity actually simplifies the use of the model as a whole. One might expect reduced tension and a better outcome.</p>
<p><i>Observation: Divergent tools are limited to Brainstorming.</i></p>	

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Advantage	Disadvantage (Trade-off)
<ul style="list-style-type: none">▪ See the discussion relative to simplicity in the first observation.	<ul style="list-style-type: none">▪ See the discussion relative to simplicity in the first observation and the continuing points made relative to the benefits of tools. <p>Some individuals might prefer different methods of idea generation such as Brainwriting.</p>

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Advantage	Disadvantage (Trade-off)
<i>Observation: Agreement and Compromise uses only one method for convergence.</i>	
<ul style="list-style-type: none"> ▪ See the discussion relative to simplicity in the first observation. 	<ul style="list-style-type: none"> ▪ See the discussion relative to simplicity in the first observation and the continuing points made relative to the benefits of tools. ▪ The lack of criteria for evaluating ideas places the burden on the individuals and the dyad for finding their way to a solution without the benefit of the guidance that criteria might provide.

A common theme in this analysis is the relative simplicity of the PREP model in comparison to CPS. It is easier to teach, learn, and use. Considerations for the inclusion of additional elements to the PREP Problem Solving components would have to be well considered in light of the measured benefits of PREP as a whole.

Summary

A Process Mapping analysis of the CPS, CBMT, and PREP problem solving models revealed the structure, operation, and contingencies of each model. The CBMT and PREP models were then compared to the CPS model and advantages and disadvantages were identified and discussed relative to CPS. This analysis is continued in Section 5 with recommendations for the modification of the CBMT and PREP models.

Section 5: Summary and Conclusions & Recommendations for Further Study

Introduction

General conclusions and recommendations for all models and specific recommendations are presented on the basis of this work. This study has revealed a number of differences and similarities between the subject problem-solving models. While they appear to share the same roots in creative studies, they have taken different evolutionary paths. Recommendations are made to suggest ways of deriving benefit from these different paths.

Summary Conclusions and Recommendations for all Models

The ideal dyadic relationship problem solving model would be one that was easy to teach, easy to learn, readily used in any context no matter how emotionally charged, and would produce satisfactory results. It is apparent from this study that such a model does not yet exist. Nor might one expect, in view of the complex nature of human relationships, a perfect model to be developed. The net result is that trade-off's must be made.

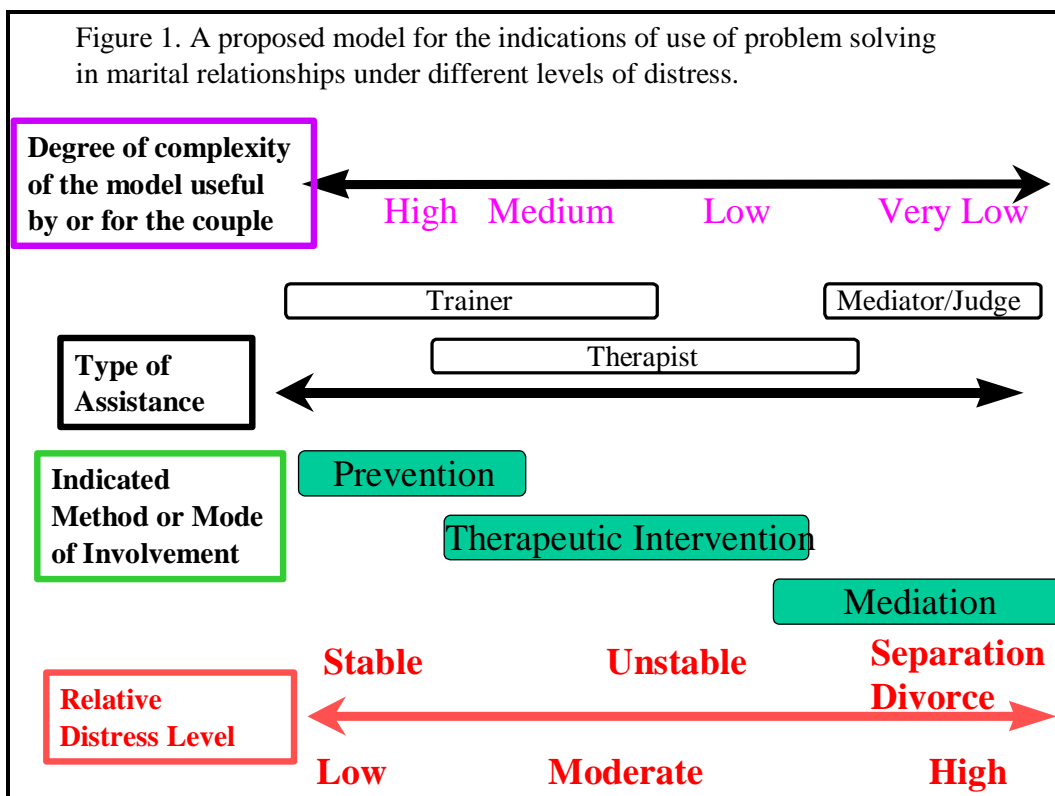
The model shown in Figure 1 (Martin, 1997) proposes considerations for the application of marital problem-solving models. The model proposes that as the relative distress level of the couple increases, the tolerance for complexity in the problem solving model decreases and the level and nature of professional involvement increase. A

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relatively complex problem-solving model would be indicated primarily in cases where there are low levels of distress.

PREP is recommended primarily for prevention with secondary application in therapeutic intervention. CBMT is apparently used primarily in a therapeutic intervention mode. A literature search, despite the fact that PREP, CBMT, and other models have roots in the earliest forms of CPS, has not identified the use of CPS, as it stands today, in the field of interpersonal (marital) relationship problem solving.

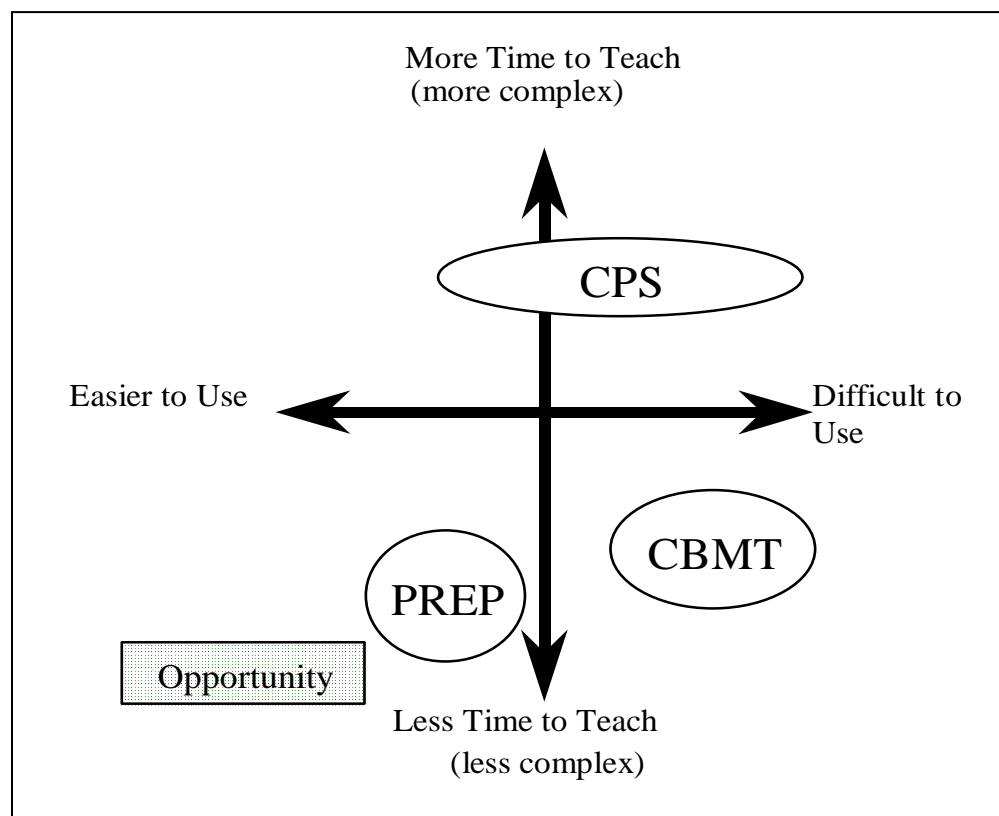
Figure 1. Indications for the use of dyadic problem solving models under distress.



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In the foregoing context, the following figure presents the relative positioning of each of the models on trade-off scales of ease of instruction and ease of use. The better opportunity lies in the apex of the bottom left quadrant representing a model that would be easy to teach and would be easy to use to solve problems.

Figure 2. Relative ease of instruction and ease of effective use



In search of the Opportunity model (see lower left quadrant of Figure 2.), it is recommended that a new hybrid model be developed based primarily on the PREP and CPS models. It would substantially retain the simplicity and linear flow of the PREP model while adding select tools, guidelines, stems, and methods from the current CPS

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model to enhance its performance without sacrificing its ease of instruction, ease of use, and efficacy. PREP, on analysis, appears to be a reasonably faithful replication of earlier versions of CPS so there is a real measure of consistency. This consistency lends credence to the possibility of considering why both models appear to be effective. The same cannot be said for the CBMT model and, as such, it requires more extensive modification to approach the suggested Opportunity model. The communication guidelines for CBMT (see Appendix A), however, appear to be a good summary and should be considered for inclusion as a teaching tool in communication programs targeted toward enhancing problem solving.

Recommendations for CBMT

The rate of success is an issue even according to Baucom and Epstein (1990) who proposed the CBMT model. Findings by others for CBMT and related approaches are also mixed (Behrens & Sanders, 1994; Behrens, Sanders, & Halford, 1990; Gottman, 1998). One must be careful not to indite the model without further research because it's context for use may be that of therapeutic intervention where the relative distress level is moderate to high. This context alone might be an indicator of a lower probability for success.

That said, specific recommendations are made for modification of the CBMT problem-solving model.

In summary, recommendations are made for the select elimination of several existing processes and tools, the incorporation of select processes and tools from CPS,

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and the use of the CPS invitational stems in such a way that might enhance CBMT.

These tools and their associated guidelines may serve to provide the couple with the "how" of accomplishing their task when they are currently given only the "what." These recommendations and a brief rationale for each follow.

1. Incorporate additional structure into Step 1. Statement of the Problem to ensure that the problem is identified and the appropriate one is being worked on. Options for accomplishing this include the following:
 - Incorporate a deliberately divergent operation intended to identify and clarify the problem. This could be accomplished with the use of Brainstorming and the 5 W's and an H as tools and invitational stems as a supplement with simplistic guidelines.
 - Adopt an invitational stem from PREP, "What can we do together to solve this problem so that it does not hurt our relationship?" as a preamble to the problem solving process. This stem may be used throughout the process as a focal point for the purpose of engaging in the process to bring the couple back to the matter at hand should they stray or emotions run too high.

In addition, use the following invitational stems from CPS. The Mess-Finding stems could be used to diverge in finding and stating the problem. The Data-Finding stems could be used to help understand the problem during discussion.

Mess Finding Stems	Data Finding Stems
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<i>Wouldn't it be nice if...</i> (to generate opportunities)	<i>Data</i> (To generate more knowledge that simply gathering facts.)
<i>Wouldn't it be awful if...</i> (To generate challenges or obstacles.)	<i>Facts and Opinions</i> Who? What? When? Where? Why? and How?

- Consider adding an additional stem that each party would repeat or acknowledge to bring an element of closure to this step. "The problem that I am willing to work on for the good of our relationship is (state the problem)."

2. Modify the divergent element of Step 2. Consider Alternative Solutions as follows:

- Add the missing guideline of seeking combinations to the instructions for Brainstorming. This may serve to encourage the development of cooperative solutions.
- Add the Brainwriting tool as an option along with Brainstorming. Brainwriting is a written exercise that is done quietly and, as such, might ameliorate or avoid communication problems. The Brainwriting tool instructions and use might have to be modified slightly since it is generally used in groups of four to seven people. Some people prefer a writing process to speaking when generating ideas.
- Incorporate the divergent stems from CPS Problem Finding to invite solutions.

Problem Finding Stems
<i>How to...?</i> (To generate problem statements.)
<i>How might...?</i>

(To generate problem statements.)
<i>In what ways might...?</i> (To generate problem statements.)

3. For Step 3. Deciding on a Solution, consider the modification or elimination of the unilateral decision-making processes in the convergent process. Replace these with the Hits tool that allows both parties to vote on the options that they might accept. Further clustering of ideas using the Highlighting tool might be advantageous for finding themes and combinations of ideas. Again, the idea is to foster and enable cooperation through the process.

4. For Step 4. Adopt a Final Solution, the following recommendations are made:
 - Incorporate the concept and use of criteria for evaluating and refining options.
 - Use the ALUo tool to help refine ideas that are not immediately acceptable. This gives the participants a chance to explore the solution in an affirmative manner with the expectation of confirming the current option or developing a better solution.
 - Incorporate the concept of acceptance finding to identify those people and elements that might interfere with or support the solution. Once identified, those interferences are dealt with and support is sought.
 - Adopt the stems from CPS Acceptance Finding. In particular, the "What I see myself doing is..." and its plural complement would appear to invite the

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affirmative development of acceptable action steps. The other stems would serve to guide the couple in their discussion about the design and implementation of the plan.

Acceptance Finding Stems
<i>Who? What? Where? When? Why?</i> (To generate sources of assistance and resistance.)
<i>What I see myself doing is...</i> <i>What we see ourselves doing is...</i> (To identify action steps.)
<i>Who will do what by when?</i> (To develop a plan of action.)

CBMT recommendation summary

It would appear that CBMT could be enhanced with the simplification of the existing structure and the select incorporation of additional tools that guide the dyad toward cooperative solutions. These tools might further provide the dyad with solutions that are alternative to compromises that may not otherwise be easily reached or even fully acceptable to both parties.

Compromise is offered as the means of reaching a decision throughout the process. Compromise, however, in this context and particularly in light of the *quid pro quo* (trade-off) option for deciding on solutions, implies a reluctance for acceptance and sacrifice by one or both of the parties in the adoption of a given solution. Compromise solutions, in this sense, may not be as satisfactory as those reached with a spirit of cooperation. Cooperation speaks toward creating new options that are acceptable to both

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parties or at least equally uncomfortable to both but nonetheless acceptable. The chance of a satisfactory outcome might be increased with cooperation. That said, one must also recognize that cooperation is influenced by many factors that may or may not be present in any given relationship or circumstance. If cooperation were the standard mode of interaction in problems, the couple might not need an external problem solving process but may have developed one of their own (Gottman, 1994).

Recommendations for PREP

While component analyses have not been done to identify the contribution of the problem-solving model itself, a number of longitudinal studies have established the efficacy of PREP as a whole (Hahlweg & Markman 1988; Markman, 1981, 1984; Markman, Floyd, Stanley, & Jamison, 1984; Markman, Floyd, Stanley, & Storaasli, 1988; Markman, Renick, Floyd, Stanley, & Clements, 1993; Renick, Blumberg, Markman, 1992). The same studies, however, do recognize that there is some deterioration in effect over time. There would appear to be room for enhancement. This said, specific recommendations are made for modification of the PREP problem-solving model.

In summary, recommendations are made for the select incorporation of specific processes and tools from CPS along with the expanded use of invitational stems from CPS that might enhance PREP. These tools and their associated guidelines may serve to enhance the operation of the model without making it so complex as to defeat its relative

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ease of instruction and use. These recommendations and a brief rationale are listed as follows.

1. Incorporate additional structure into Component 1. Problem Discussion to ensure that the problem is identified and the appropriate one is being worked on. An option for accomplishing this is:
 - Incorporate a deliberately divergent operation intended to identify and clarify the problem. This could be accomplished with the use of Brainstorming and the 5 W's and an H as tools and invitational stems as a supplement with simplistic guidelines.
 - In addition to the existing invitational stems, use the following invitational stems from CPS. The Mess-Finding stems could be used to diverge in finding and stating the problem. The Data-Finding stems could be used to help understand the problem during discussion.

Mess-Finding Stems	Data-Finding Stems
<i>Wouldn't it be nice if...</i> (to generate opportunities)	<i>Data</i> (To generate more knowledge that simply gathering facts.)
<i>Wouldn't it be awful if...</i> (To generate challenges or obstacles.)	<i>Facts and Opinions</i> Who? What? When? Where? Why? and How?

- Consider adding an additional stem that each party would repeat or acknowledge bringing an element of closure to this step. "The problem that I am willing to work on for the good of our relationship is (state the problem)."

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2. Modify the divergent element of Component 2. Step 1. Brainstorm Possible Solutions as follows:

- Add the Brainwriting tool as an option along with Brainstorming. Brainwriting is a written exercise that is done quietly and, as such, might ameliorate or avoid communication problems. Some people prefer a writing process to speaking when generating ideas.
- Incorporate the divergent stems from CPS Problem Finding to invite solutions.

Problem Finding Stems
<i>How to...?</i> (To generate problem statements.)
<i>How might...?</i> (To generate problem statements.)
<i>In what ways might...?</i> (To generate problem statements.)

3. For Component 2. Step 3. Brainstorm Possible Solutions, for convergence consider addition of the Hits tool that allows both parties to vote on the options that they might accept. Further, clustering of ideas using the Highlighting tool might be advantageous for finding themes and combinations of ideas.

4. For Component 2. Step 4. Agreement and Compromise, the following recommendations are made:

- Incorporate the concept and use of criteria for evaluating and refining options.

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- Use the ALUo tool to help refine ideas that are not immediately acceptable. This gives the participants a chance to explore the solution in an affirmative manner with the expectation of confirming the current option or developing a better solution.
5. For Component 2. Step 5. Develop Action Plan, the following recommendations are made:
- Incorporate the concept of Acceptance-Finding to identify those people and elements that might interfere with or support the solution. Once identified, those interferences are dealt with and support is sought.
 - Adopt the stems from CPS Acceptance-Finding. In particular, the "What I see myself doing is..." and its plural complement would appear to invite the affirmative development of acceptable action steps. The other stems would serve to guide the couple in their discussion about the design and implementation of the plan.

Acceptance Finding Stems
<i>Who? What? Where? When? Why?</i> (To generate sources of assistance and resistance.)
<i>What I see myself doing is...</i> <i>What we see ourselves doing is...</i> (To identify action steps.)
<i>Who will do what by when?</i> (To develop a plan of action.)

PREP recommendation summary

It would appear that PREP could be enhanced with the addition of select tools such as Brainwriting for idea generation, the inclusion of convergence tools such as Hits and Highlighting, and the adoption of invitational stems from CPS. It is not recommended that the simplistic linear flow and limited choices be substantially changed. These recommendations might be expected to enhance the efficacy of the PREP problem-solving model without significantly diminishing its ease of use and instruction.

The Questions for This Study - Findings

Each of the four questions for this study has been addressed using the Process Mapping method discussed in Section 3. The following provides a brief summary of each of the respective questions:

1. In what ways are marital problem-solving models similar and dissimilar to the Creative Problem Solving (CPS) model?
 - This has been explored in detail and presented in the Process Innovation section of this report in Section 4. In summary, the following was found:
 - Similarities:
 - The subject models are intended to solve problems.
 - The subject models utilize guidelines and structure.
 - The subject models use a number of divergent and convergent tools and techniques.

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- Their roots come from the early creativity and problem solving work of Osborn, A. F. and Parnes.
 - To varying degrees each model incorporates elements of understanding the problem, finding solutions, and developing a plan of action.
 - Dissimilarities:
 - The stated purpose of the CBMT and PREP models is one of solving primarily interpersonal problems in a dyad whereas CPS may be used in many other ways and contexts.
 - CBMT, with only 4 steps and PREP with 2 components and 4 steps are much less complex than CPS with 3 components, 6 phases, and 2 steps in each phase..
 - The CBMT and PREP models are used in a linear manner from start to finish rather than entering the process at any appropriate place as the flexibility of CPS allows.
2. What are the contingencies surrounding the use of marital problem-solving models and how do they compare to those of CPS?
- This is delineated in the Process Diagnosis section of this report in Section 4. In summary, the following was found:
 - Similarities:
 - The subject models require training for effective use.
 - They may be self-facilitated for facilitated by another.

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- The balanced application of judgment is expected in each of these models.
 - They make de facto recognition, in their guidelines and structure, of the need to manage the human environment for effective problem solving.
 - Dissimilarities:
 - The CBMT facilitator/trainer is often a therapist who is involved in content. A CPS trainer/facilitator is not involved in content.
 - CBMT involves 4+ hours of training and PREP 2 to 4 hours versus 30+ hours of training for CPS use.
 - CBMT and PREP are reliant on communication guidelines and methods for the models to be successful. These models recognize the potential for interpersonal conflict and inadequate communication. Such structured communication, beyond invitational stems, is not part of CPS.
 - In general, CBMT is less thorough and precise than CPS.
 - In general, PREP is less thorough than CPS.
3. What are the implications of the differences in structure and contingencies between marital problem-solving models and CPS?
- This is discussed in the Trade-off Analysis section of this report in Section 4. In summary, the following was found:
 - The relative simplicity of CBMT and PREP models might indicate a relative ease in both teaching and learning. PREP does provide a simpler process flow than either CBMT or CPS. The tradeoff for both models is that a lack of

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detail, and particularly tools and instructions on how to accomplish tasks, might leave room for misunderstanding or misapplication.

- The process for stating or understanding the problem is very simplistic in CBMT as opposed to the detailed CPS processes that are intended to make sure that the problem is sufficiently understood for solution.
 - CBMT tools are sometimes not well described or are lacking in comparison to CPS that provides a number of tools for accomplishing each task. This might negatively impact the function of the CBMT model even as it simplifies by requiring fewer choices.
 - Any of these models are only as effective as the training and environment allow. Each has advantages and disadvantages that should be considered in any application.
4. In what ways might the marital problem-solving models be enhanced by the incorporation of elements of CPS?
- This has been discussed and recommendations made, as the Process Recommendation section in Section 5 of this report. In summary, the following recommendations were made:
 - Specific structural changes and simplifications and the select incorporation of CPS tools are suggested for both CBMT and PREP. These recommendations are detailed for each step of the process.
 - It is also recommended that invitational stems from CPS be adopted for use in the appropriate steps.

Implications to CPS and Creative Studies

The Process Mapping analysis confirms what even a casual observer might conclude; the CPS model is relatively complex and sophisticated when compared to models currently in use in marital education and counseling. The pragmatic considerations of how easily any problem-solving model may be taught and effectively used are paramount when choosing and designing such models. This study concludes that the CBMT and PREP problem-solving models can and should be modified by the current CPS model and the wealth of associated knowledge. At the same time, the implications to CPS are that one should recognize the practical constraints of environment, practice, and intent when delivering CPS. One might consider the use of condensed models that begin to look more like the simpler models presented here (as modified). This might allow a broader use in niche applications.

At the same time new or adapted models are considered, care must be taken not to corrupt any model to such an extent that it loses its roots to the foundational research and begins to confuse the field. After the first marital problem-solving models were adapted from CPS and creative research and studies, the connections between the disciplines appear to have essentially been broken. What began as one tree with offshoot saplings of adapted models (i.e. the behavioral models cited in this report), has now become a number of separate trees growing further apart and no longer sharing the same sustenance from a common root system. The tree of CPS has grown and prospered while the other

trees have, to varying degrees, mutated and changed or stagnated; not always for the better.

The implications for the creative studies and the development of problem-solving models such as CPS reside within the opportunity to build a bridge between the various models and fields of study such that the old roots are reconnected, new roots are grown, and new strength is derived from a larger shared root system. The path to this bridge is discussed in the following recommendations for further study.

Recommendations for Further Study

In the sole opinion of the author and in the following context, recommendations are made for further study and examination of the opportunity.

My view of the global context consists of three points: First, it is clear that the fields of study of marital relations and creativity do not cross-fertilize. Second, it is clear that there are no intentional mechanisms or paths by which cross-fertilization might efficiently occur. And third, it is not clear that a reason exists for expending the energy necessary to change the insular nature of these fields. Translating this to plain English: There is apparently no routine communication between people in marital research and Creative Studies because there are no channels and none of the parties are aware of a compelling reason to communicate and share research.

The following recommendations are made:

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1. For marital researchers and practitioners, it is recommended that component research be furthered to attempt to clearly identify the impact of the problem-solving component on the enhancement programs. This will serve to enhance the foundations of their research as well as to identify the opportunity for additional focus on problem solving development. This is consistent with the recommendations made by The Department of Human Development and Family Services at Pennsylvania State University (1990)

2. For creative studies researchers and practitioners, it is recommended that research be done to establish the efficacy of all or part of the CPS model in interpersonal relationship applications. An alternative might be the preparation of a considered research paper to bring together existing evidence or indications of efficacy. Either approach might help build a bridge to justifying any effort by the marital field to look further at the creative studies model and work.

3. For creative studies researchers and practitioners, it is recommended that an Opportunity model be developed and communicated to the marital field for consideration and evaluation. This model would incorporate the work done in this project and, perhaps, an extension to include additional support for the efficacy of the recommended changes.

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All this said, however, the following cautions are made. In 1997, during PREP training and in 1998 during training for the Couples Communication method that also incorporates some elements of problem solving, the author spoke with the program developers. It was clear from those conversations that the work of creating and maintaining these programs is significant in terms of all resources required and especially manpower (e.g. researchers, practitioners, and subjects), time and money. All of this builds to create a tremendous amount of incentive against making anything other than well-considered and well-researched changes in these programs. Any proposed modification, even if favorable, may not be undertaken if, in the overall context, it is not justified. This is the challenge.

In addition, research by Blissett and McGrath (1996) indicated that it is important to distinguish between creativity training and problem-solving training. Their study of adults suggested that training in creativity skills should not be assumed to impact on interpersonal problem-solving skills and vice versa. Not all problem-solving methods may be creative and not all creative methods may include problem solving. Future research should keep this in mind as well as the fact that this study focused solely on the Creative Problem Solving model from creative studies and did not include other creative methods.

It is also recommended that professional therapists and counselors with advanced degrees and education examine and continue this work. This recognizes potential fundamental limitations of this work authored by one who is not a professionally trained therapist.

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This said, the primary question for the future might be "How can fundamental research be justified and carried out to create a strong bridge between the fields of marital research and creative studies?"

Summary

Specific opportunities for the enhancement of dyadic problem-solving models were identified as a result of a process mapping analysis. These recommendations include a clarification of the CBMT model along with the addition of select tools and techniques taken from CPS. Recommendations for PREP include the addition of select tools and techniques taken from CPS. It is recognized that the teaching and use of any of these models are significantly impacted by the specific contingencies of the context of their use.

While, a single universal model may not exist, it is recommended that the valuable components of CPS be carefully examined for adoption and use in these and other marital or dyadic problem solving models. The lack of cross-disciplinary communication may have hindered marital researchers and program developers from considering creative studies problem-solving research and application. At the same time, there has been little flow of information into creative studies as well. It is recommended that steps be taken to bridge that gap.

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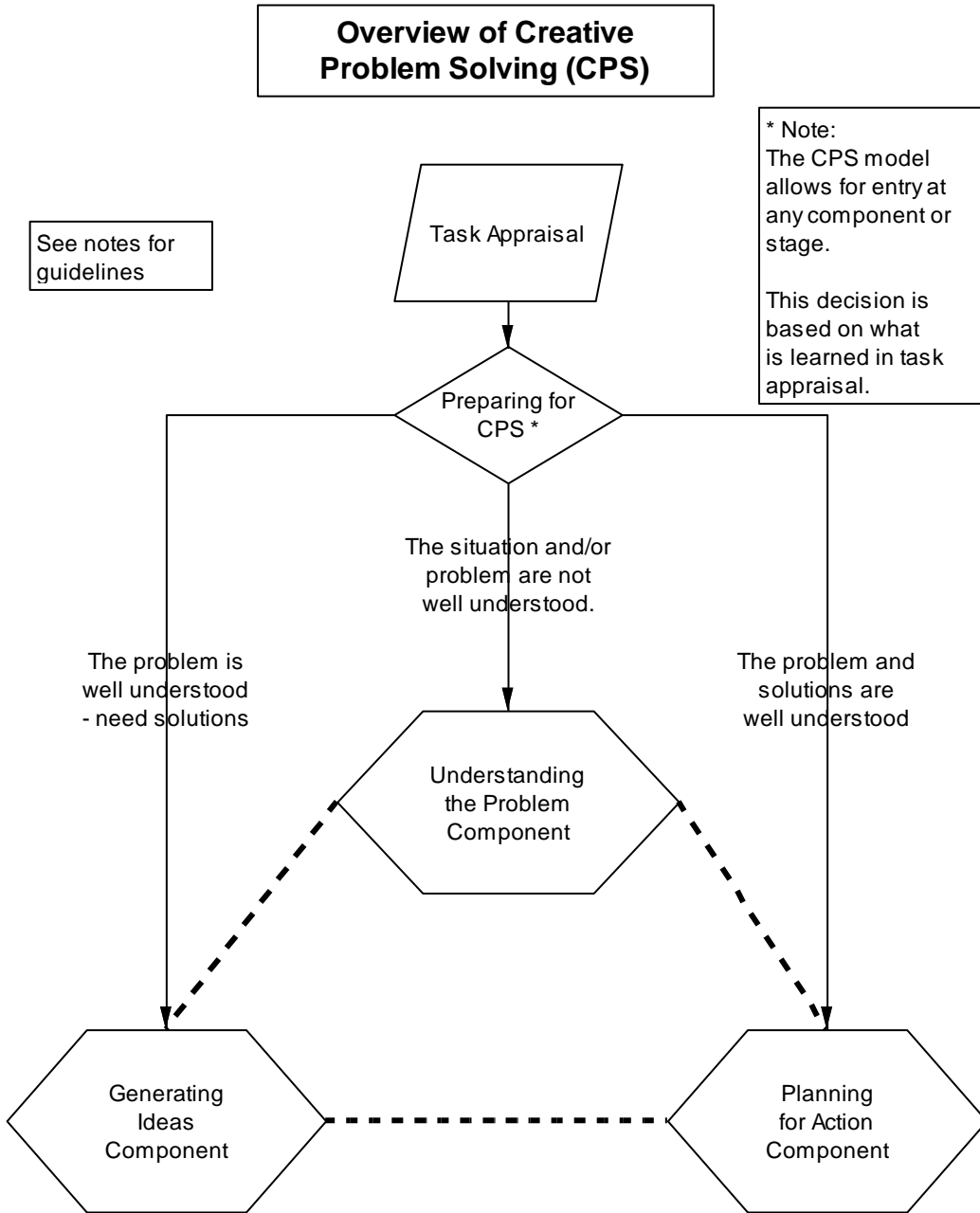
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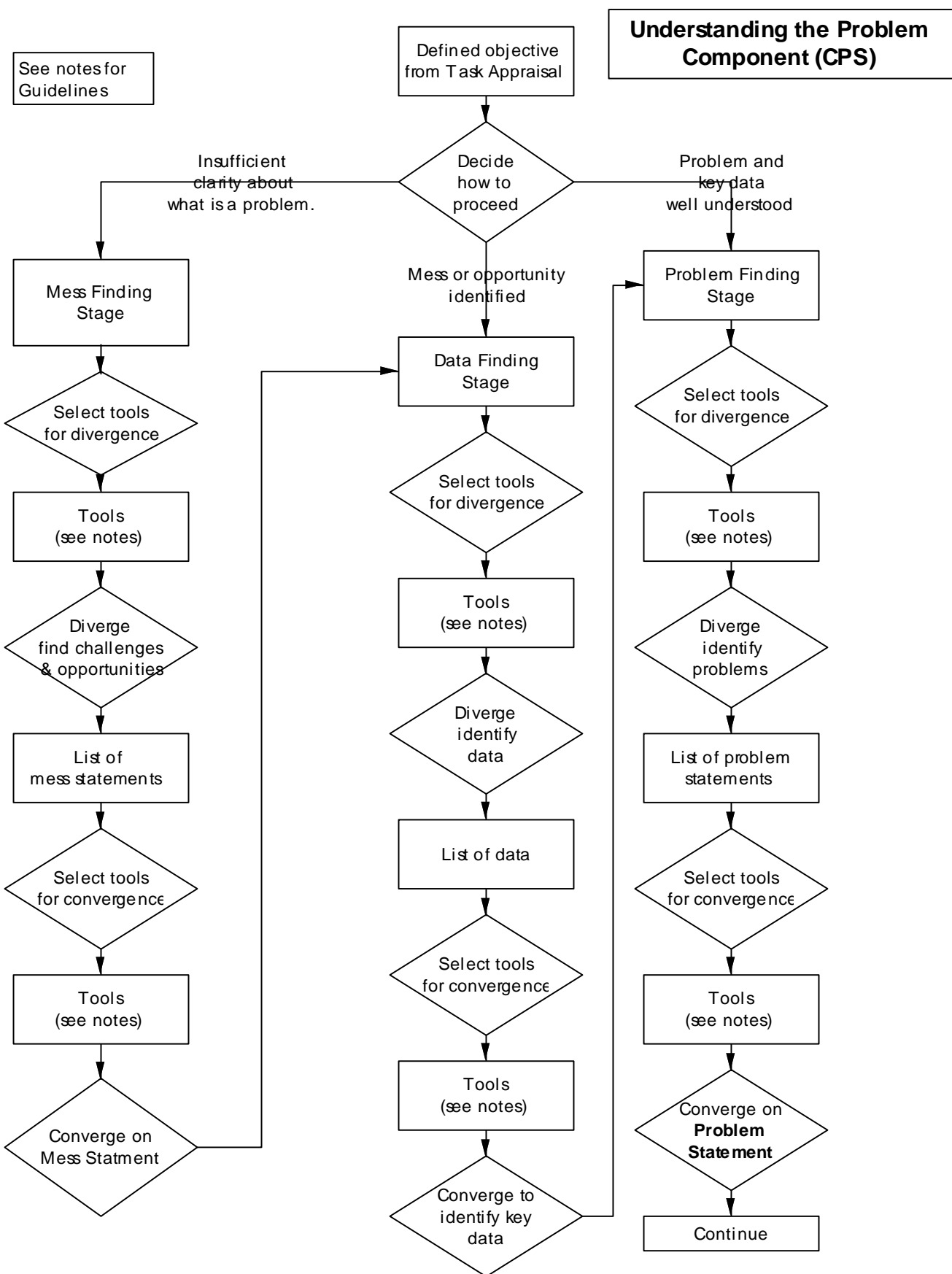
Appendix A - CPS Process Flow Diagrams

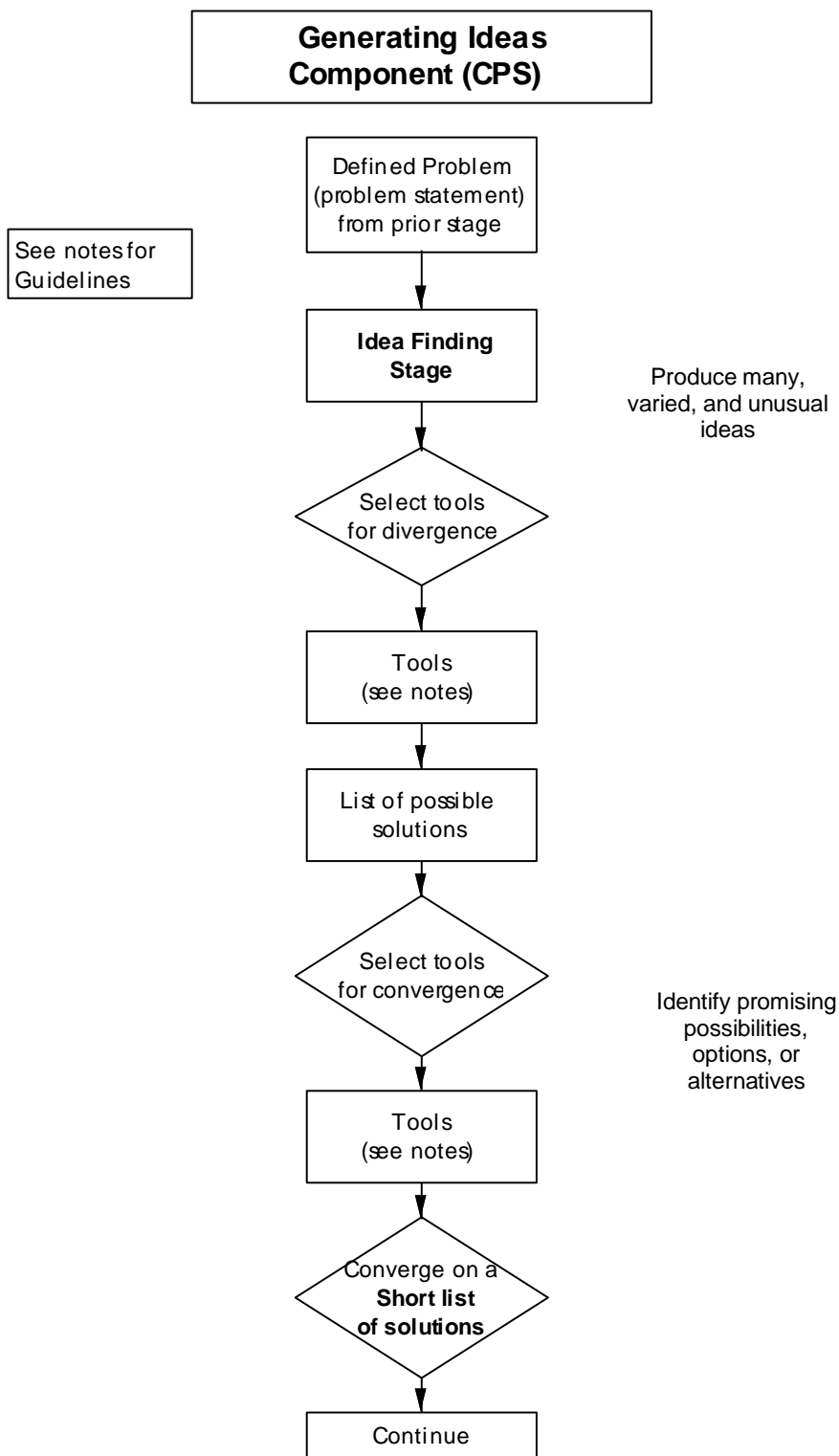
Creative Problem Solving Model Process Flow

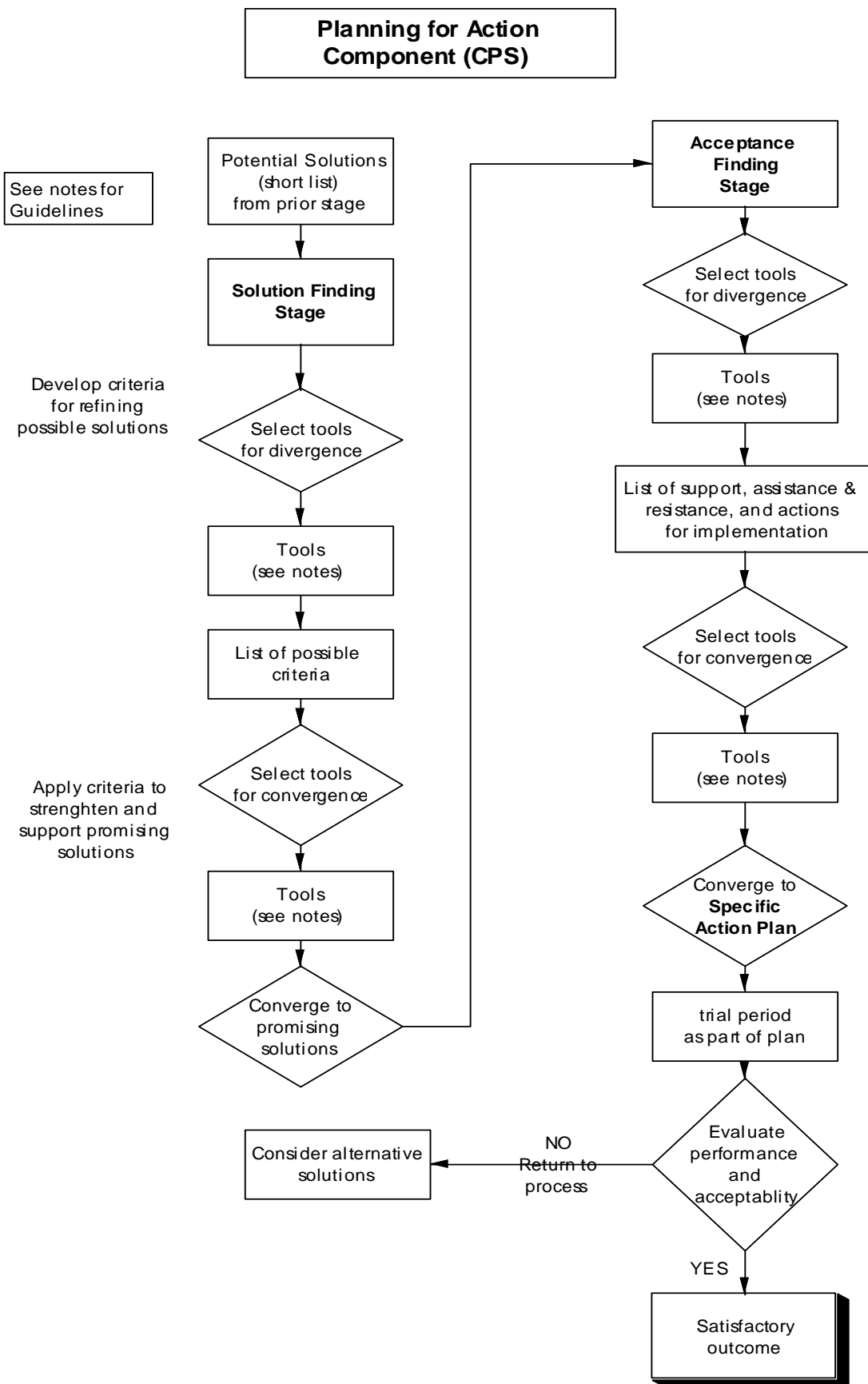
The model is presented in parts over the next few pages.

Figure 3 Creative Problem Solving (CPS) process flow diagram









Appendix B - Notes to Creative Problem Solving (CPS) Model

Notes to CPS Model

Creative Problem Solving incorporates a number of guidelines and tools that allow the process to operate effectively. They inform not only what should be done but also how.

Guidelines:

The dynamic balance between the suspension and application of judgment is one of the key principles of CPS (Isaksen, Dorval, & Treffinger, 1994). This balance is achieved in the guidelines for divergence and convergence. Here are the guidelines that are to be followed during the appropriate (divergent or convergent) phase of the process:

Divergence guidelines:

- (1) Defer judgment
- (2) Strive for quantity
- (3) Freewheel - strive for uniqueness or originality
- (4) Seek combinations

Convergence guidelines:

- (1) Use affirmative judgment
- (2) Be deliberate
- (3) Consider novelty
- (4) Stay on course

Appendix B

Stems:

Invitational stems work to invite solutions. The commonly used invitational stems are shown in the following table. (Isaksen, Dorval, & Treffinger, 1994)

Invitational stems used in CPS listed by component.
(Isaksen, Dorval, & Treffinger, 1994, p. 189)

Invitational Stems Listed by Step		
Mess Finding	Data Finding	Problem Finding
<i>Wouldn't it be nice if...</i> (to generate opportunities)	<i>Data</i> (To generate more knowledge that simply gathering facts.)	<i>How to...?</i> (To generate problem statements.)
<i>Wouldn't it be awful if...</i> (To generate challenges or obstacles.)	<i>Facts and Opinions</i> Who? What? When? Where? Why? and How?	<i>How might...?</i> (To generate problem statements.)
		<i>In what ways might...?</i> (To generate problem statements.)

Invitational Stems Listed by Step	
Solution Finding	Acceptance Finding
<i>Will it...? Will they...?</i> (To generate criteria.)	<i>Who? What? Where? When? Why?</i> (To generate sources of assistance and resistance.)
<i>If I had to choose only one of these; which would it be?</i> (To operate the Paired Comparison Analysis.)	<i>What I see myself doing is... What we see ourselves doing is...</i> (To identify action steps.)
<i>If I (option) to what extent will it...?</i> (To operate the evaluation matrix.)	<i>Who will do what by when?</i> (To develop a plan of action.)

Appendix C - Creative Problem Solving tools and their applications

Creative Problem Solving (CPS) tools and their applications

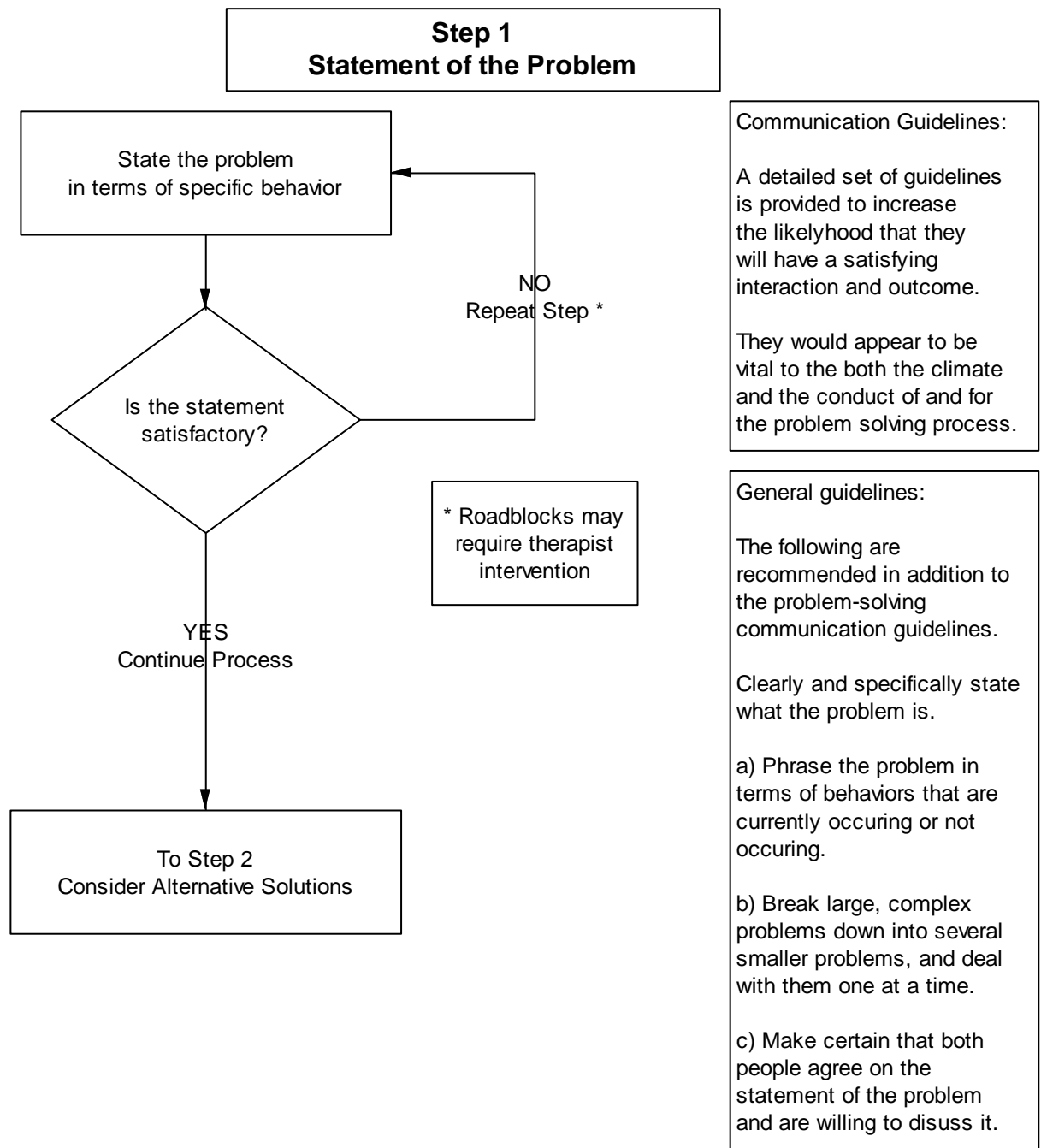
The "X" mark indicates tools commonly applied for each CPS stage listed by divergent and convergent process. (Isaksen, Dorval, & Treffinger, 1994)

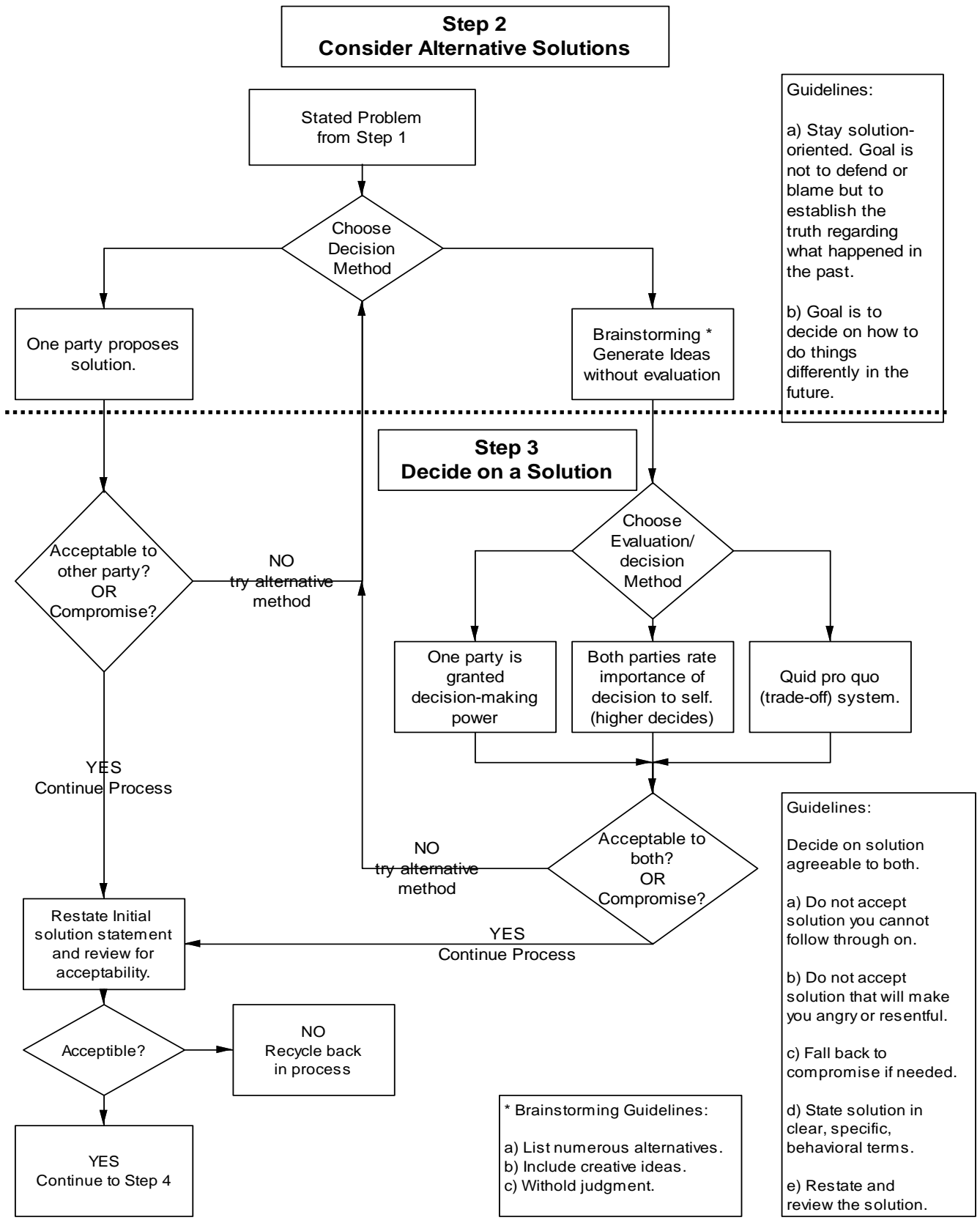
Tools by type and name	Mess Finding	Data Finding	Problem Finding	Idea Finding	Solution Finding	Acceptance Finding
<i>Divergent tools</i>						
Attribute Listing				X		
Morphological Matrix				X		
Brainstorming with Post-Its (r)	X	X	X	X	X	X
Brainwriting	X		X	X	X	X
Brainstorming	X	X	X	X	X	X
Idea checklists (i.e. SCAMPER)				X		
Question lists	X	X	X	X		X
5 W's and an H	X	X		X		X
Force Fit				X		
Sensory Search for Relationships			X	X		
Ladder if abstraction			X			
<i>Convergent tools</i>						
Isolating Hits	X	X	X	X		X
Highlighting	X	X	X	X		
Success grid	X					
Sorting (i.e. musts and wants, short term and long term)		X		X	X	
Advantages, Limitations, and Unique qualities (ALUo)					X	
Paired Comparison Analysis					X	
Evaluation Matrix					X	
Sequencing sort - Short, Medium, Long-term (SML)						X
Implementation Checklist						X

Note: This list is not intended to be all-inclusive or exclusive. It lists the tools referenced in Creative Approaches to Problem Solving (Isaksen, Dorval, & Treffinger, 1994). The table shows tool preferences but does not mean to indicate that any of the tools may not be used in any other appropriate (convergence or divergence) phase. Also, it is important to note that there are dozens of additional tools and methods that can be found in the creative literature. Smith for example, lists and examines 172 idea generation methods (divergence) (1998).

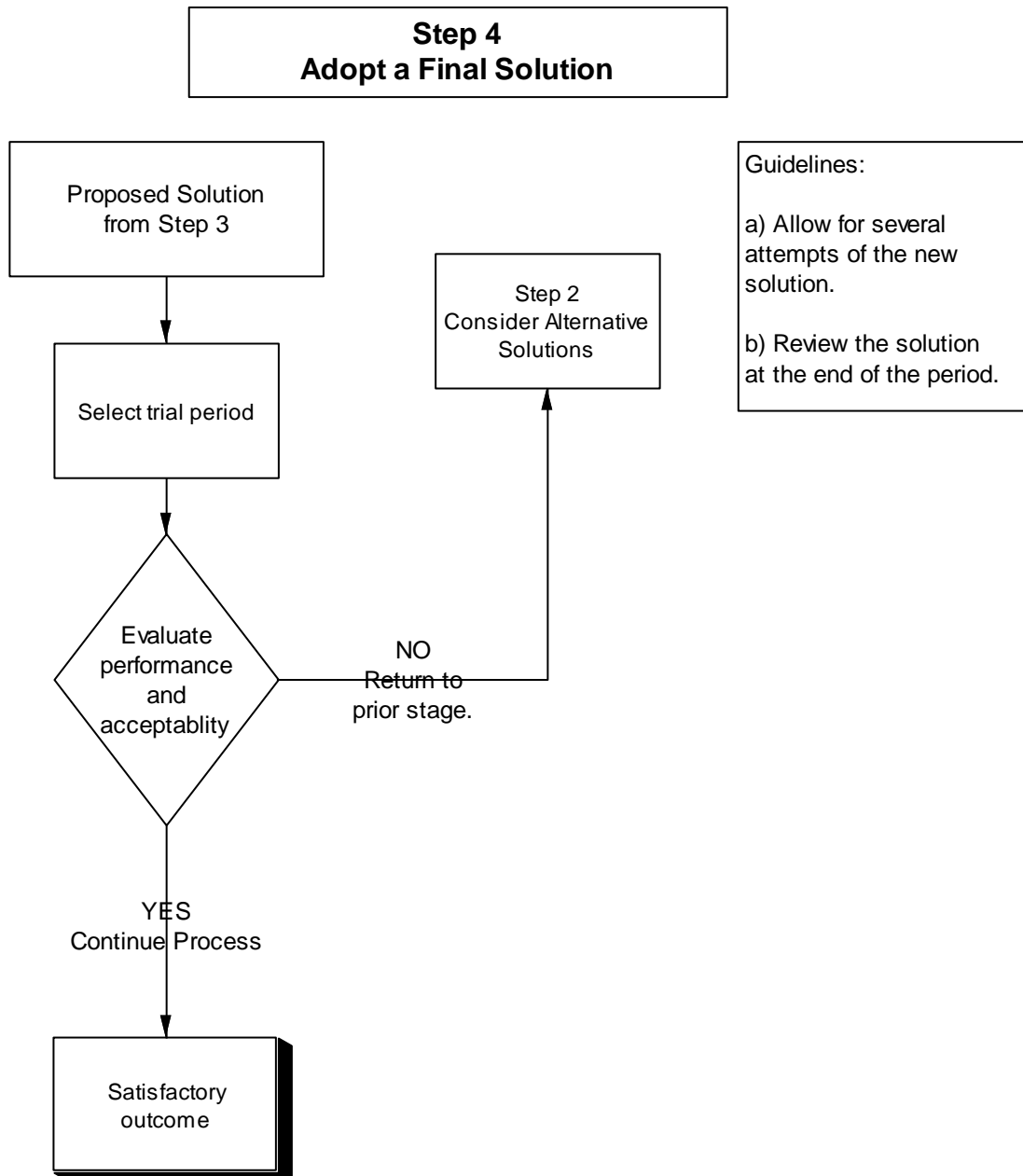
Appendix D - CBMT Problem Solving Model Process Flow

Figure 4. CBMT process flow diagram





Appendix D



Appendix E - CBMT Communication Guidelines While Problem Solving

CBMT Communication Guidelines While Problem Solving

(Baucom & Epstein, 1990)

Communication to establish one's current desires and preferences, and one's role in previous interactions:

1. Speak for yourself.
 - a. Use "I" statements.
 - b. No (sic) [Do] not mind read what your partner thinks, feels, or wants - ask instead
2. Express your desires, preferences, and needs clearly and directly.
3. Volunteer to accept responsibility for your previous behaviors that have contributed to problems; do not focus on blaming and finding fault with your partner.

Communication to acknowledge one's partner:

1. Use nonverbal communication to express listening and concern.
 - a. Make eye contact.
 - b. Avoid vague and negative nonverbal communication, such as eye rolls, sighs, crossing your arms, turning away from your partner.
2. Reflect on or paraphrase important thoughts and feelings that your partner expresses.
3. Acknowledge positives about your partner.
 - a. Comment on something your partner has done to assist with the problem in the past; express appreciation for your partner's efforts.
 - b. Tell what aspects you like about your partner's proposed solution, even if other aspects of the solution are undesirable to you.
 - c. Express thanks or appreciation when your partner compromises or agrees to aspects of the solution that are important to you.
4. Do not interrupt while your partner is speaking.
4. Do not use broad, general, unchangeable traits to describe your partner (or yourself).

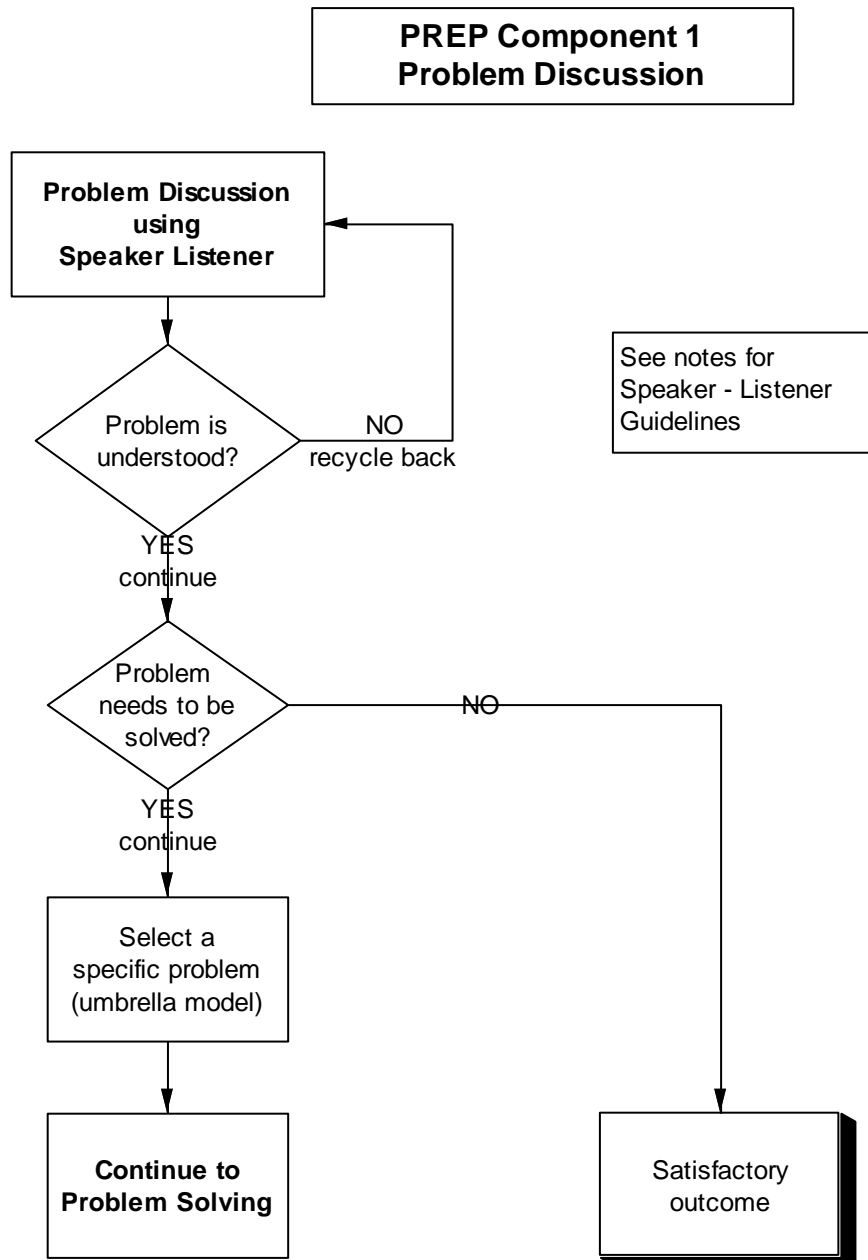
Communication to assist in staying appropriately solution-oriented:

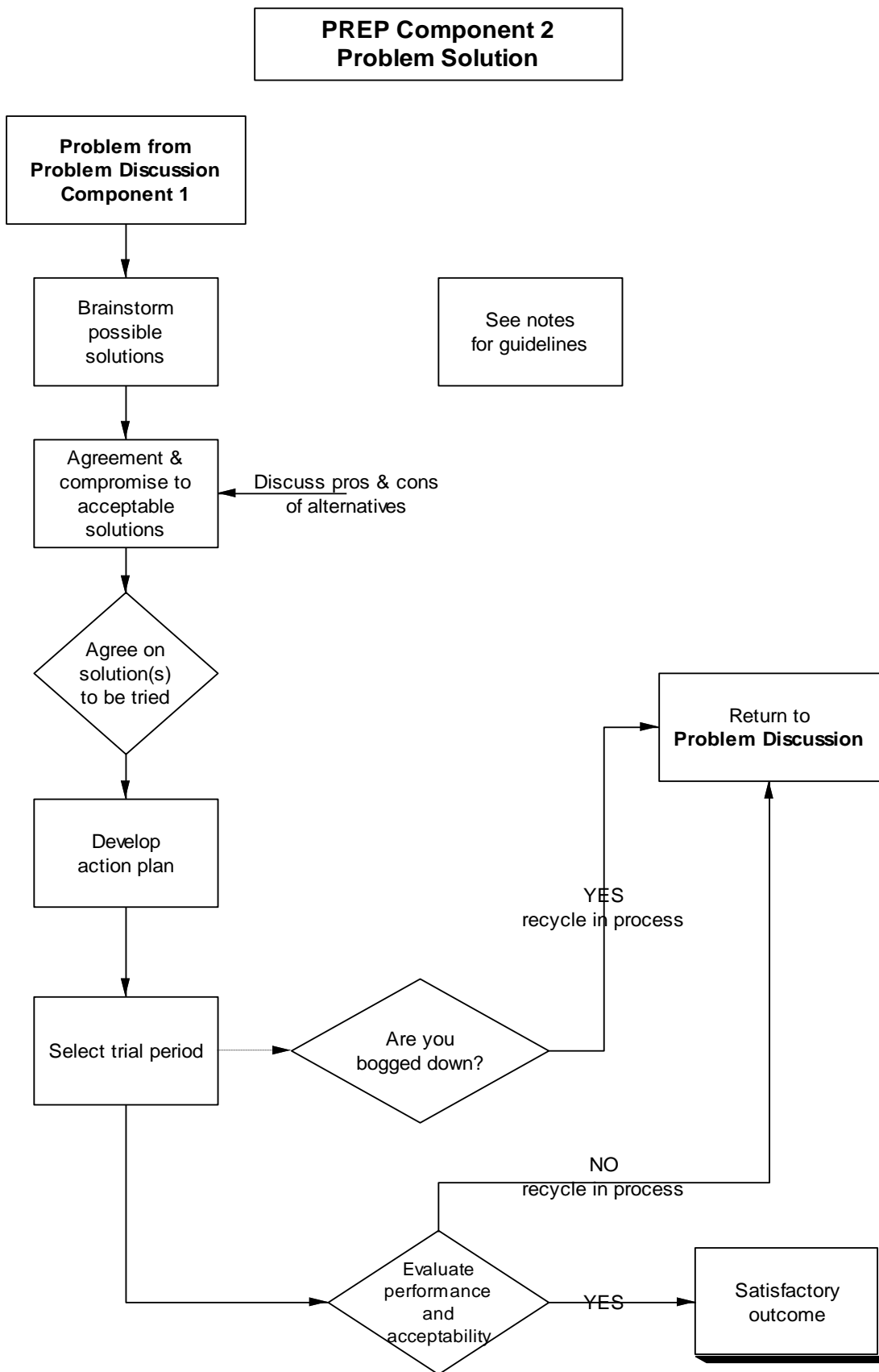
1. Focus your communication on the future and what you can do to make changes in the problem area.
 - a. Do not focus on the past.
 - b. Do not dwell on trying to establish the "truth" of what happened and did not happen in the past.
 - c. Avoid the use of absolute or exaggerated terms such as "always" and "never" in discussing past behaviors and events.
2. Do not get sidetracked by discussing other concerns, even if they are related to the problem.
3. Do not use indirect or inappropriate strategies to obtain the solution you desire.
 - a. Do not attempt to obtain your solution by making your partner feel guilty for not going along with the solution -"poor me."
 - b. Do not attempt to make your partner feel stupid or illogical for not seeing things your way.
 - c. Do not use implied or explicit warnings, threats, or ultimatums as way of forcing a solution on your partner.

Appendix F - PREP Problem Solving Model Process Flow

PREP problem solving process flow

Figure 5. PREP problem solving process flow diagram.





Appendix G - Notes for PREP Problem Solving Model

Guidelines for Speaker/Listener communication process.

Rules for the speaker:

- Speak for yourself. Don't mind read.
- Keep statements brief. Don't go on and on.
- Stop to let the listener paraphrase.

Rules for the listener:

- Paraphrase what you hear
- Focus on the speaker's message. Don't rebut. (Reserve judgment!)

Rules for both:

- The speaker has the floor
- Speaker keeps the floor while the listener paraphrases.
- Share the floor.

Once the discussion has progressed to the point that there is clarity around a specific problem, the process may be taken to the solution phase.

Problem Solution ground rules:

- Stay on one subject
- Use time-outs if necessary to keep the emotional level satisfactory.
- Discuss the problem until both parties understand the problem.
- Other mutually desirable ground rules may be developed and used by the couple.
- *Agenda Setting*: Select a specific problem to be solved.
- *Brainstorming*:
 - Come up with as many possible solutions as can.
 - Try for specific positive suggestions.
 - Do not criticize or comment on ideas.
 - Get loose and creative.
 - Keep track of suggestions/someone writes them down.
- *Agreement and Compromise*
 - Discuss pros and cons of different potential solutions.
 - Work toward what you can both agree to do.
 - Follow-up
 - Agree on solution(s) to be tried at this time.
 - Summarize solution(s).
 - Agree on a time frame to follow-up.

Glossary

Compromise:	A settlement in which each side gives up some demands or makes some concessions. (Gurlanik, 1982)
Component	A part of a larger whole. May be comprised of other elements.
Converge:	(Also: Converging, convergent, or convergent thinking.) Bringing possibilities together, or choosing form among many alternatives, to strengthen, refine or improve ideas, and to reach a conclusion, synthesis, or correct response. Often used as an equivalent to critical thinking. (Isaksen, Dorval, & Treffinger,, 1994)
Diverge:	(Also: Diverging, Divergent, or Divergent thinking). Generating many possible responses, ideas, options, or alternatives in response to an open-ended question, task or challenge. Often used casually as equivalent to creative thinking. (Isaksen, Dorval, & Treffinger,, 1994)
Element:	A component part.
Guideline:	A standard or principle by which to make a judgment or decision or determine a course of action.
Invitational stem:	A specialized word, sentence, or phrase used to guide or focus your thinking in a particular way during different CPS activities. (Isaksen, Dorval, & Treffinger,, 1994)

Glossary

Model:	A structural design used to visualize something that can't directly be observed; a representation that illustrates something. (Mance, 1996)
Operation:	An action that produces an effect.
Problem:	A question proposed for solution or consideration; a question, matter, situation, or person that is perplexing or difficult. A gap between the current and a desired state.
Process	A series of actions or operations conducted to an end; an operation.
Process flow diagram:	A visual representation of the sequence of actions or operations that are part of a process. Usually presented as a map with lines representing connections between process components that are represented by specific shapes.
Process Mapping:	A method by which a process is analyzed, diagnosed, represented, and improved.
Solution:	The answer to a problem.
Step	A discrete process element that is usually part of a larger whole such as a component or model.
Tool:	An instrument or implement that is used in performing an operation or necessary in the practice of a vocation or profession, a specific means designed to serve a specific purpose or function. (Mance, 1996)