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Schema Change Processes in Cognitive Therapy

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Schemas are core beliefs which cognitive therapists hypothesize play a central role in the maintenance of long-term psychiatric problems. Clinical methods are described which can be used with clients to weaken maladaptive schemas and construct new, more adaptive schemas. Guidelines are presented for identifying maladaptive and alternative, more adaptive schemas. Case examples illustrate the use of continuum methods, positive data logs, historical tests of schema, psychodrama, and core belief worksheets to change schemas. Specification of therapeutic methods for changing schemas can lead to the development of treatment standards and protocols to measure the impact of schema change on chronic problems.

INTRODUCTION

In recent years, cognitive therapists have devoted increased attention to schemas, core beliefs which are hypothesized to play a key role in the maintenance of long-term psychiatric problems including personality disorders, chronic depression, chronic anxiety disorders, and chronic relationship difficulties. Case descriptions of treatment outcome with these disorders often credit positive results to changing maladaptive core schemas and building alternative, more adaptive schemas (Beck *et al.,* 1990). However, there are few detailed descriptions in the literature of the clinical processes used to accomplish schema change. This paper describes schema change processes in detail with case illustrations.

DEFINITIONS OF SCHEMA

Aaron T. Beck, MD introduced the concept of schemas to cognitive therapy. Beck's first book (1967) credits Piaget (1948) with the origin of the word schema to describe cognitive structures. Summarizing Harvey et al. (1961), Beck added his own definition that 'a schema is a structure for screening, coding, and evaluating the stimuli that impinge on the organism. It is the mode by which the environment is broken down and organized into its many psychologically relevant facets. On the basis of schemas, the individual is able to ... categorize and interpret his experiences in a meaningful way' (p. 283).

This early definition was echoed in later works which defined schemas as 'stable cognitive patterns' which provide a 'basis for screening out differentiating, and coding the stimuli that confront the individual' (Beck *et al.* 1979, pp.12-13) and as 'specific rules that govern information processing and behavior' (Beck *et a1.*, 1990, p. 8). In this latter book, the authors differentiate between core beliefs such as 'I'm no good' and conditional beliefs such as 'If people got close to me, they would discover the "real me" and would reject me' (p. 43). Both core and conditional beliefs are referred to as 'schemas' in their text.

In this paper 'schemas' will be used only to describe core beliefs. For clinical purposes, this author finds it useful to differentiate between schemas (core beliefs), underlying assumptions (conditional beliefs), and automatic thoughts (cognitions that automatically and temporarily flow through one's mind). Theoretically, core beliefs and conditional beliefs are similar in that they are both deeper cognitive structures than automatic thoughts. However, different therapeutic processes are used to evaluate and change these two types of beliefs. Conditional

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beliefs are often best tested through the use of behavioural experiments. Core beliefs are best suited to the evaluation methods described here.

DEVELOPMENT AND MAINTENANCE OF SCHEMAS

Cognitive therapy is based on an information processing theory which posits that schemas develop as part of normal cognitive development. According to information processing theory, we group experiences into categories to help us understand and organize our world. A child groups dogs, cats, and lions as 'animals' and may have a more specific schema of 'pet' that includes the first two animals but not the third.

The schemas that are of greatest interest in therapy are those closely related to affective states or behavioural patterns. Each person has self schemas as well as schemas about others and the world that affect emotional and behavioural reactions. Schemas do not necessarily cause chronic emotional or behavioural difficulties. However, schemas seem to play a central role in the maintenance of chronic problems regardless of the aetiological roots of these problems.

For example, one person may have experienced lifelong depression due to a variety of factors including a strong positive loading for depression and serious life stresses and strains (e.g. childhood abuse, familial deaths, and multiple failure experiences). Along the way, this person is likely to have developed negative schemas such as 'I'm no good' (self), 'Others can't be trusted' (others) and 'effort does not pay off' (world).

To overcome depression, it may be necessary for this person to make behavioural and cognitive changes. Even if environmental stressors and heredity are assumed to play a primary role in the development of this depression, key therapeutic steps are unlikely to be attempted and maintained by this person unless the schemas are evaluated and modified. This person's world-schema will erode motivation to attempt change, the self-schema may interfere with recognition of therapy progress, and the schema regarding others may lead to difficulties in the therapy relationship and in relationships with family and friends who might otherwise support progress.

Schemas serve a powerful maintenance function for problems because schemas determine what we notice, attend to, and remember of our experiences (Hastie, 1981; Marcus and Zajonc, 1985; Miller and Turnbull, 1986). A person who believes 'effort does not pay off' will notice and remember failure experiences more readily than success experiences. Someone with a self-schema, 'I am bad', will focus on personal defects, flaws, and errors, noticing and remembering these more than strengths, positive gains, and successes. Once formed, schemas are maintained in the face of contradictory evidence through the processes of distorting, not noticing, and discounting contradictory information or by seeing this information as an exception to the schematic, and therefore 'normative', rule (Hastie, 1981; Bodenhausen, 1988; Beck *et al.*,1990).

The ease with which schemas are maintained even in the face of contradictory evidence poses a dilemma for cognitive therapists. Much of cognitive therapy relies on modifying beliefs through the review or production of evidence that contradicts negative or maladaptive conclusions drawn by a client. With problems of relative short duration (several months for a child or several years for an adult), production of contradictory evidence often leads to a shift in belief. This shift in belief can occur quickly (within a therapeutic hour or over the course of several weeks) if supporting alternative schemas exist. That is, a depressed person who currently has an 'I am bad' self-schema activated may be able to shift this belief within a few weeks if this person has an 'I'm OK' schema which is normally activated in the non-depressed state.

However, people with lifelong or chronic problems often do not have an alternative schema available, and therefore, no amount of contradictory evidence will shift their beliefs. A person whose only self-schema over the course of a lifetime has been 'I am bad' will look at a list of data supporting an 'I'm OK' conclusion and say to the therapist, 'Yes, I see this evidence, but I am still bad'.

For this reason, treatment of chronic problems within cognitive therapy usually involves not only testing maladaptive beliefs but also identifying and strengthening alternative, more adaptive schemas. An alternative schema must be developed before the client will be capable of looking at the evidence and saying, 'Yes, this suggests I might be OK'. The remainder of this article will focus on clinical methods that seem helpful in accomplishing the dual goals of weakening maladaptive schemas and developing more adaptive schemas.

IDENTIFYING MALADAPTIVE SCHEMAS

Beck (1967) postulated that schemas and affect are closely joined (pp.288-289). For this reason, a therapist wishing to identify maladaptive schemas should follow the affect. A client who is feeling intensely depressed, anxious, angry, guilty or ashamed can be asked, 'What does this [internal or external event] say about you?' to access self-schemas, 'What does this say about other people?' to access other-schemas, and What does this say about your life or how the world operates?' to access world-schemas.

It is important to identify all three types of schemas because they will interact with each other to help explain a person's affect, behaviour, and motivations. For example, two people may have self-schemas, 'I'm inadequate'. The first may have an other-schema, 'Others are critical', and, therefore, adopt avoidant behavioural strategies and withdraw from challenging situations. The second person may have an other-schema, 'Others are protective', and adopt dependent interpersonal strategies and be willing to enter any situation if accompanied by a helpful other.

While questioning the meaning of high affect events will usually quickly lead to the identification of schemas, other methods can also be employed. Clients can be requested to do a simple series of sentence completions, 'I am _____________', 'People are ___________' and 'The world is ______________'. Since schemas are usually stated as absolutes, these sentences can usually be completed with a single word to identify a schema.

Belief questionnaires can also be used as a starting point to identify core beliefs. These include the Dysfunctional Attitude Scale (Weissman and Beck, 1978; Weissman, 1979), the schema checklist in Appendix A of the text on personality disorders written by Beck and colleagues (Beck *et al.*, 1990*),* and the schema questionnaire developed by Young (Young, 1990). These questionnaires include a variety of core and conditional beliefs and clients can be expected to endorse many of the beliefs listed. For these reasons, these questionnaires are helpful for broadly conceptualizing a client's belief system. Further discussion with the client will be necessary to determine which of the many beliefs endorsed are most strongly held and central to the problem of focus in therapy.

Once a therapist and client have identified core schemas, it is important that these be expressed in the client's personal language and idiom. For one client, 'I am worthless' may be expressed in those words. For another client, the same concept might be stated as 'I am a zero'. A third might capture the schema with a phrase yelled at them by a parent, '[You're a] small piece of dirt'. By labelling the maladaptive schema in words or images that come directly from the client's experience and mind, the affect associated with the schema will be greater and the meaning of any change achieved will impact the client more deeply. Therefore, if the therapist identifies a potential schema and the client agrees the therapist has correctly captured the concept, it is important to ask the client, 'How would you say this in your own words?''Can you give me an example of how this works in your life?' 'Do any images or memories come to mind associated with this belief ?'

IDENTIFYING ALTERNATIVE SCHEMAS

After identifying key maladaptive schemas, therapist and client need to identify alternative, more adaptive schemas. It is important to identify the desired schema as early as possible. As will be clear in subsequent sections, clinical methods for schema change will be more effective if the alternative, more desirable schema is the focus of data collection and evaluation rather than the maladaptive schema.

To identify the alternative, more adaptive schema, ask the client, 'How would you like it to be?' For self-schemas ask, 'If you weren't ____________________, how would you like to be?' For other-schemas ask, 'If people weren't ________, how would you like them to be?' For world-schemas ask, 'If the world wasn't_________ , how would you like it to be?' For clients who cannot name an alternative, it may be necessary to ask further questions with a shift in perspective. For example, 'You see yourself as worthless, how do you see other people whom you admire? Would you like to be more like that? If you were like that, would you still be worthless?'

The new, more adaptive schema also should be labeled in the client's own words. Sometimes the alternative schema will be the direct opposite of the maladaptive schema. For example, 'I'm lovable' might be a desired alternative to 'I'm unlovable'. Often, however, the alternative schema which the client chooses is quite different from what the therapist or linguistics would predict. For example, one client had a negative schema, 'Others are critical', and the desired alternative was, 'Others are similar to me'.The process of identifying maladaptive and alternative schemas can take several weeks in therapy. Often, either the old or new schema concept will be

modified a number of times as interventions and therapeutic discussions proceed. Changes in the words and images used to describe maladaptive and alternative schemas will often clarify for both client and therapist subtle nuances in meaning that can be quite helpful for identifying possible avenues for change.

For example, one client identified a schema, 'The world is dangerous and violent' which was maladaptive because it maintained an immobilizing depression and fear. In observing events which activated this schema over the following weeks, she was able to clarify that her strongest affect actually came with a related schema, 'Kindness is meaningless in the face of pain and violence'. Working with this schema and the alternative, 'Kindness is as strong as violence and pain', helped her cope better with the violent and painful realities she faced and sustained a spirit of hope and effort in her life. Her depression and anxiety were resolved over subsequent months. Moreover, this client considered her ability to develop new approaches for coping and transforming a sometimes harsh world her most significant therapeutic gain.

Clinicians sometimes wonder whether the alternative schemas should be absolute in form or represent a more balanced conclusion. Should the alternative to 'I'm unlovable' be 'I'm lovable' or 'I'm lovable sometimes to some people?' Since schemas are absolute, the alternative used in therapy should be stated as an absolute statement. A negative absolute will be paired with a more positive absolute. This is important or the maladaptive schema may not be shifted at all. 'I'm lovable sometimes to some people' could be incorporated by the maladaptive schema as merely evidence of occasional exceptions to the rule or as evidence that some people are especially charitable (or foolish) without making any shift in the core belief 'I'm unlovable'.

Interestingly, a negative absolute will be more absolute than a positive form of the same absolute. This is because negative schemas imply absence (e.g. unlovable means never lovable under any circumstances) whereas positive schemas imply presence which may not be perfect (e.g. lovable means someone can love you but not necessarily that everyone will love you). This semantic meaning difference between positive and negative absolutes means that a more positive alternative schema will, by its very nature, be more balanced and more capable of summarizing a range of life experiences than a negatively stated schema.

SCHEMA CHANGE: CLINICAL METHODS

Schema change usually involves a simultaneous focus on weakening old schemas and strengthening new ones. Most clinical methods discussed here contribute to both tasks if the maladaptive and adaptive alternative schemas have each been well-defined by therapist and client. These schema change methods are most usefully employed with a client who has already mastered basic therapy skills such as identification of thoughts and emotions and testing automatic thoughts. Further, they will have greatest impact when applied to schemas which are closely related to the client's primary problems.

Continuum Methods

Pretzer (1983) was among the first to recommend the use of a continuum to evaluate negative schemas. Since the maladaptive and alternative schemas are absolutes, and often opposites, a continuum charts the territory between these poles. In its simplest form, a client could be asked to place themselves on a continuum between 100% unlovable and 100% lovable. Through questioning the evidence, the therapist could try to shift the client's self evaluation to a midpoint on this continuum to reduce absolutistic thinking.

Extensive use of continuum by this author and her colleagues led to the development of strategies which maximize the effectiveness of continua used for schema change. These strategies, summarized here, include: charting on the adaptive continuum, constructing criteria continua, two-dimensional charting of continua, and using a two-dimensional continuum graph to illustrate interdependent schematic beliefs.

Charting on the Adaptive Continuum

Development of the alternative more adaptive schema can be enhanced if continuum work is done on a continuum which charts the presence of the adaptive schema only. Thus, rather than using a continuum which ranges from 100% unlovable to 100% lovable, it is often more productive to use a continuum which ranges from 0 - 100% lovable. A clinical example illustrates the advantages in this approach.

One of the purposes of a continuum is to shift absolutistic beliefs to more balanced mid-range beliefs. Lydia believed she was unlovable. Lydia rated herself as 100% unlovable on an initial continuum which ranged from 100% unlovable to 100% lovable. Her therapist asked her to place other

people she knew on this continuum. Lydia placed friends and people she liked in the 50 -95% lovable range. Next, her therapist asked where she would place various people Lydia disliked intensely (e.g. an uncle who had molested her, a boss who was cruel to a number of people at work). As Lydia considered these people, she rated them 95% and 85% unlovable and moved her own rating to 80% unlovable because she was at least not intentionally harmful to others. Thus, this bidirectional continuum was helpful in modifying Lydia's original perception that she was 100% unlovable.

However, in a subsequent session, Lydia's therapist used a unidirectional continuum of lovability (0-100%). Lydia initially evaluated herself as 0% lovable on this scale. Therapeutic questioning directed Lydia's attention to ways in which this evaluation was not completely true and Lydia eventually rated herself as 5% lovable. While Lydia achieved a 20% shift on the bidirectional continuum, this shift was actually less meaningful to her than the 5% shift on the unidirectional continuum of lovability.

How can we understand the differential impact of movement along these two types of continua? First, a unidirectional continuum starts at the 0 point which is mid-range on a bidirectional continuum. More importantly, any shift on a unidirectional continuum is a move in the direction of endorsing the new schema. That is, Lydia needed to actually consider herself lovable before she could rate herself as 5% lovable. It was much more meaningful for Lydia to see herself as 5% lovable than to see herself as 80% unlovable. For this reason, it is preferable to do continuum work related solely to the desired alternative schema rather than on a bidirectional continuum which includes the maladaptive schema.

Continuum work is usually done repeatedly over weeks or even months in therapy. Clients can be asked to rate the new schemas being formed on a weekly basis. Some therapists ask their clients to rate the most and least they have held that schema during the week. This schema 'range' can be used to identify experiences and moods during the week that support either the old or new schemas. Further, continua ratings allow the client to subjectively quantify schema change progress. Lydia initially rated herself in the 0-5% range of lovability. After two months of therapy focus on this schema, her weekly ratings were in the 10-30% range. Six months later she regularly evaluated herself to be 40-60% lovable.

Constructing Criteria Continua

One strategy for helping a client gain schema flexibility is to construct criteria continua. This method begins by asking the client to rate themselves or others on a desired schema continuum. Generally, client ratings are initially extreme (i.e. close to 0%). The nature of schemas is that they are abstract and involve global judgments. Interestingly, clients are less likely to rate themselves extremely on the more concrete behavioural criteria which are the basis for their overall schematic judgments. A clinician can use this discrepancy in global versus specific evaluations to illustrate the nature of schema maintenance to clients and to help them develop a plan for change.

Peter's central schema was that he was 'weird'. His desired alternative schema was that he was 'normal'. When asked to rate himself on a continuum of normal, Peter rated himself 0%. His therapist then engaged him in the following discussion.

> T: Peter, before we go on, I realize I'm not completely sure what you mean by 'normal'. What things do you have in mind when you think of someone who is normal?
> P: Well, a normal person has friends, holds a job, is happy most of the time, and makes the most of life.
> T: So are these the criteria you use when you judge yourself 0% normal?
> P: Yes.
> T: In that case, let's list those things underneath this continuum of 'normal'. Under 100% normal, let's list each of these qualities in 100% or perfect terms. For example, a perfect record of having friends would mean 'Easily becomes friends with anyone you choose at any time'. Does that seem perfect or 100% to you?
> P: (Laughing slightly) Yeah.

Figure 1 shows the criteria continuum constructed by Peter and his therapist. At first, they listed his criteria for 'normal' in perfect terms under the 100% rating on the global continuum of normality. Then, they defined these same criteria in perfect absence under the 0% rating on the normality continuum. Finally, a line was drawn between each of the defined endpoints to reveal criteria continuum to Peter who then rated himself on each of these specific criteria of 'normal.

It is critically important to define the criteria continua in absolute extremes at the endpoints. Without therapist help, clients will often define common experiences as the endpoints (e.g. defining 0% as having just a few friends) which undermines the usefulness of criteria continua for providing per-

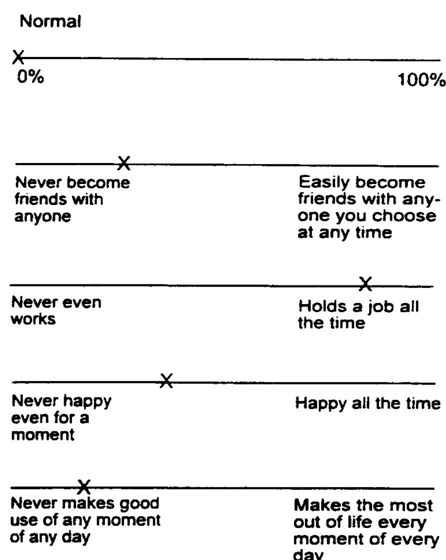

Figure 1. Peter's self-ratings on a global continuum of normality and his criteria continua

spective to the client. If 0% is defined as complete absence of a quality or experience and 100% is defined as the perfect achievement of these same qualities, most clients will rate themselves somewhere in the mid-range on each criterion. Peter's ratings are shown as X's on the continua in Figure 1.

After constructing the criteria continua and completing Peter's ratings, his therapist continued questioning Peter to guide his learning

T: What do you notice when you look at these ratings?
P: Well, I rate more than 0 down here (pointing to the criteria continua). But I still feel like I'm not at all normal.
T: That's interesting. These are the criteria you use for normal. You are above 0 on each of them. And yet when you add them all up, you get 0. How do you think that happens?
P: (Long pause). Well, I'm not sure. I guess I do have some good things going in these areas, yet when I noticed bad things or problems, the good things get erased.
T: Oh. So the good things only count for a short time.
P: Right. And the bad things count forever.
T: Those are tough scoring rules! It helps me see how you never get above zero!
P: Yeah. I guess it's impossible.
T: Impossible if we stick to those rules. Do you have any ideas about how we might change your rules so you'd have more of a fair chance?

These types of discussions with clients help them see the information distortions that maintain their maladaptive schemas. Further, the criteria continua can provide a concrete planning ground for change if clients want to improve the state of their life in schema-relevant ways. For example, a client who sees others as untrustworthy can use criteria for trustworthiness to evaluate which friends show more promise to be trustworthy. Steps can be taken to enhance these friendships and be cautious in others. Therapist and client can examine their own relationship and discuss what steps the client can take to evaluate trustworthiness and restore trust once it is threatened.

Two-Dimensional Charting of Continua

Sometimes, a schema describes two interrelated concepts and the most meaningful continuum analysis will be portrayed on a two-dimensional chart. Frank had a schema, 'Getting close to people is painful'. A single continuum line would not adequately address this belief. However, the two-dimensional continuum pair shown in Figure 2 helped Frank examine this schema. As you see in Figure 2, Frank rated various relationships in terms of both closeness and painfulness to discover that these two concepts did not always covary in the ways predicted by this schema. He and his therapist were then able to discuss methods for differentially handling relation-

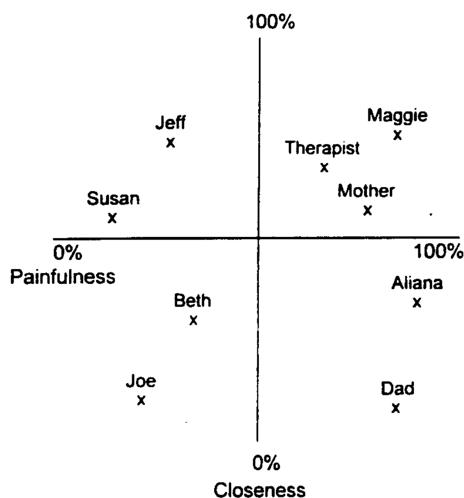

Figure 2. Two-dimensional charting of experiences to evaluate the schema, 'Getting close to people is painful'

ships in each of the four quadrants of this two-dimensional graph. This approach helped reduce Frank's relationship avoidance significantly.

Two-Dimensional Continuum Graphs
Some schemas can be evaluated by drawing the schema on a two-dimensional graph and then searching for data that do not fit the schematic equation (J. Blouin, personal communications, February 24, 1993). For example, many clients hold the belief, 'Perfection is the only true measure of worth'. This belief predicts that worth can be determined by the line drawn on the graph depicted in Figure 3. To weaken this schema, the therapist can ask the client questions to search for data that does not fall on this line. A parent might be asked if they received a handmade birthday card from a youngest child. This birthday card may not have been perfect, but it may have been highly valued by the parent. The same client might be asked if they have ever completed a project with a high degree of perfection and yet not found the outcome worthwhile when it was done. These data points are shown in Figure 3 and, since they do not fall on the line predicted by the schema, they begin to support alternative schemas such as, 'Even imperfect experiences can have worth', and 'Perfection is not always worthwhile'.

Flexibility and Persistence in the Use of Continua
Only a few of the dozens of methods for using continua are illustrated here. Cognitive therapists are urged to use a continuum for schema work as often as an automatic thought record is used to test automatic thoughts. The comparison, with thought records is apt because a goal of therapy is to teach clients to evaluate beliefs on a continuum whenever they notice themselves making absolute judgments that negatively impact their mood or behaviour. Combining continuum methods with questions which guide client discovery can help shift core beliefs in small ways which, over time, can lead to dramatic shifts in schemas. Unlike automatic thought records which sometimes lead to shifts in automatic thoughts within a single therapy session, continuum work will facilitate schema change only if persistently and creatively used over a number of weeks or months.

Positive Data Log

A second therapeutic method central to schema change is the use of positive data logs. Whereas continua are effective in shifting schemas by focusing on the dichotomous, and therefore inadequate,

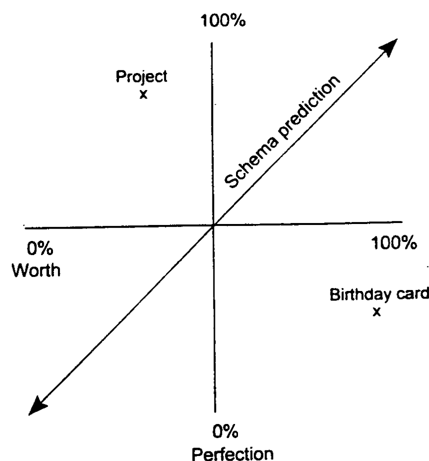

Figure 3. Line graph with disconfirming data for the schema, 'Perfection is the only true measure of worth'

explanatory nature of schemas, positive data logs contribute by helping the client correct information processing errors. While the positive data log is a simple intervention in principle, it can be one of the most difficult to implement in the early stages of schema change when it can be most useful to the client. Therefore, suggestions to enhance client compliance are the primary focus of this section.

A positive data log can be presented to a client as soon as the client agrees to evaluate a new, alternative schema. To provide a clear rationale for this task it is helpful to review with the client the nature of schema maintenance. One useful metaphor is prejudice which, like schemas, is maintained in the face of contradictory evidence by discounting, distorting, not noticing or evaluating this evidence as an exception to the (schema or prejudice-driven) rule. A client can be asked to name a person who holds a prejudice the client does not share. This other person's prejudice can be a working model for client and therapist to explore the nature of prejudiced beliefs and information processing.

Through a series of guiding questions (Padesky, 1993), the client will discover that, to change prejudiced beliefs, it may be necessary to actively look for schema-contradictory observations. Further questions can challenge the client to derive strategies for changing someone else's prejudicial beliefs. These strategies (including observation and record-keep

ing) are then considered as possible tools for evaluating the client's own schemas.

Once this rationale that schemas are maintained by biases in information processing is understood, the client is challenged to keep a daily log of all observations that are consistent with a new, more adaptive schema. This task is more difficult than it sounds because, if the client does not yet believe this new schema, the assignment asks her or him to perceive something which she or he does not have a schema to see. Remember, schemas provide a 'basis for screening out differentiating, and coding the stimuli that confront the individual' (Beck *et al.*, 1979, pp.12-13). If the client does not have a schema, 'others can be trusted', it will be very difficult, if not impossible, to perceive data that supports a schema of trustworthiness.

The challenge in using positive data logs, therefore, is for the therapist to support and encourage clients' persistence in efforts to perceive and record data the clients do not believe exists. The therapist can begin by supporting this effort within the therapy session. Once the positive data log has been described and assigned to the client, the therapist should be alert to any data mentioned in subsequent therapy sessions which could be recorded in this log. The therapist can assume the client will discount, distort, not notice or view as an exception any data available to be recorded in the initial weeks of this task. The following session excerpt illustrates how therapist dedication to the data log can enhance client awareness and learning:

T: Did you notice anything this week to write in your data log to support the new belief you'd like to hold, 'I'm likable?'

C: No. I tried, but there's just nothing to support that.

T: OK. Well, tell me what you wanted to talk about today and maybe we can add some more discussion of this to the agenda.

C: If you want to. What I want to talk about is how nervous I got when I had lunch with Kay on Tuesday.

T: Is that the main thing for the agenda today? (Client nods). OK. Before we do that, let me first clarify something. How was it that you and Kay ended up having lunch together?

C: She asked me if I was free.

T: Has this happened before?

C: Yes. She and I have lunch together every few weeks.

T: Do you generally have a good time together?

C: Yes. That's why this week was so upsetting to me.

T: I see. We'll have to try to understand what happened then. But before we get into that, I'm wondering, do you think Kay inviting you to lunch might be a small piece of evidence that you are likable?

C: Oh, I don't know. She and I work near each other-that's all.

T: Do others work near her too?

C: Yes.

T: Does she have lunch every few weeks with all those people?

C: No, just me and Diane.

T: Do you think it's possible she might ask you to lunch because she finds you at least a little bit likable?

C: Well, maybe a little

T: Remember, the data we are looking for to write in your 'I'm likable' data log includes tiny experiences. Not big things. Why don't you write this down in your log right now as possible evidence. Then we can talk about what happened on Tuesday.

This dialogue illustrates a number of important roles the therapist plays to help a client begin to perceive data which supports a new schema. First, the therapist is ever alert to small evidence. Second, the therapist asks questions to help the client evaluate the evidence. When the client discounts the importance of the evidence, the therapist assures the client that even very small bits of data are important to record. The therapist can employ humor by asking, 'Help me recall, is it true you ignore small negative things that happen?' Clients will frequently laugh at this obviously false question and the therapist can playfully confront the client, When you stop counting the small negatives, then I'll let you discount the small positives'.

Another strategy to facilitate recording data in the positive data log when the client vehemently discounts its importance is to allow the client to record confidence ratings after the data. For example, a client might write 'Kay invited me to lunch' and then follow this entry with '(20%)' to indicate she is only 20% confident that this is evidence of likability. These confidence ratings make it easier for some clients to record data because, until a new schema is formed, almost all data can be interpreted to be consistent with the maladaptive schema. Further, these confidence ratings provide additional information to help therapist and client evaluate the usefulness of the positive data log in strengthening the new schema. In addition to noting the amount of data the client is able to perceive, the confidence

ratings for this data can be expected to increase as the new schema is formed and strengthened.

The initial data recorded in the new schema data log will almost always result from therapist vigilance if the client does not yet even partially believe the new schema. To enhance the client's ability to independently perceive data which supports a new schema, the therapist can help the client derive categories of experience to observe and record. For example, one client who wanted to find evidence she was worthwhile was initially only willing to record experiences where she helped other people. She was successful in recording several examples of helping others in the first two weeks of keeping her log.

Her therapist then encouraged this client to consider things she did to help herself as 'worthwhile'. Following discussion of this possible category for new data, the client noticed and recorded two in stances of times she took care of herself in positive ways. In subsequent weeks the therapist helped the client name additional categories which might describe evidence of 'worth'. Over the course of therapy the client decided to record times she approached difficult tasks instead of avoiding them, times she expressed her own opinion rather than deferring to others, and instances when she valued her own emotional reactions even if these were different from the people surrounding her. The addition of these categories helped the client begin to find multiple daily evidence of worth and she began to regard herself as worthwhile.

Continuum methods are easily combined with the positive data log to track progress. Clients can be asked to make weekly ratings on a continuum to show how much they believe the new schema. Typically, a client who initially believes a schema 0% will begin to believe the new schema 5-10% after 4-8 weeks of keeping a positive data log. In the next month or two, belief in the new schema will usually increase to 20-40%. For most clients, the positive data log will need to be kept for a minimum of six months before the new schema begins to solidify. The clearest evidence that the new schema has been formed and accepted by the client is when he or she begins to readily and regularly perceive data and new data categories which support the new schema. Thus, once the positive data log becomes easy to do, it is probably no longer necessary.

Continuum methods and the positive data log are recommended whenever the goal of therapy is to weaken maladaptive schemas and construct new ones. These two methods, once learned, provide the client with a complete set of skills to evaluate learn to apply new, more adaptive schemas. A number of additional methods can also be helpful, although they would not all be used as frequently in therapy. Three of these are discussed here: historical test of schemas, use of psychodrama, and core belief worksheets.

Historical Test of Schema

Young (1984) proposed that schemas could be evaluated by examining the evidence for and against them, similar to procedures used to test automatic thoughts. Since schemas are formed over a lifetime, a lifetime of data needs to be considered. The Historical Test of Schema was a method developed to accomplish this task (Young, 1984). To begin, a client identifies a core maladaptive schema. The therapist then helps the client make a list of confirming and disconfirming evidence for this belief, a separate list for each age period of the client's life. For each time period, therapist and client write a summary of the data as it relates to the schema.

It is recommended that therapists begin with the infancy and toddler time period because few clients will judge themselves harshly during these ages. As an example, consider the evidence listed by one client for ages 0-2. Peter had a schema that he was 'weird' and 'abnormal'. He felt this was 'written in his DNA' and was unchangeable. His therapist assigned him to read about babies age 0-2 to see what was `normal' for these ages. Peter also interviewed his mother and recalled things he had heard about himself as an infant. His data is shown in Figure 4.

Notice that the only evidence for 'abnormality' was that Peter had colic as an infant. In fact, Peter

Schema: I'm abnormal

Ages: 0-2

Evidence Supporting	**Evidence Not Supporting**
Had colic.	**Ate Normally** **Learned to crawl, walk speak at normal ages.** **Liked to put things in my mouth.** **Enjoyed playing peek-a-boo.**

Ages 0-2 Summary: Up to age 2, I was a pretty normal baby. I had colic which upset my parents but many babies have this.

Figure 4. Historical Test of Schema, ages 0-2: Peter's data and summary.

read about colic in a baby book and learned that colic was quite common. Discussions with the therapist led Peter to conclude that colic was not weird and did not mark him as different from other children. The conclusion he was normal as an infant was contrary to Peter's image that 'weirdness' was written in his DNA. Over four therapy sessions, Peter completed the historical test of schemas for six different time periods in his life (divided by natural life events such as school and job transitions). His six summary statements began to weave a new interpretation of his life. At the end, he wrote an overall summary for his life which illustrates the seeds of a new schema:

> I did not have a steady history of abnormality. I started out OK and then home problems and abuse from my dad led me to be depressed. My depression has gotten in the way of me being as close to people as I wanted to be . . . Since I've been in therapy I have a lot more evidence I am normal than abnormal so it seems I can learn to undo my problems. If I were totally abnormal I couldn't change this much (Padesky, 1990, p. 33).

Historical tests of schemas can help clients develop a more compassionate view of themselves if they have negative self-schemas. Negative other- or world-schemas can also be evaluated by the historical test. For these schemas, the desired outcome is often to help the client develop greater awareness of and the ability to discriminate between positive and negative relationships and events. For example, a client with the schema, 'people will hurt me', may have extensive evidence that most family members were hurtful, but also may be able to identify one or two family members or friends who were loving and kind. Recall of these more positive relationships that may have been forgotten can help the client learn that, while some people are hurtful, others can be caring in a reliable way.

Some clients may have periods of their life which they cannot recall due to trauma, alcohol and drug abuse, or other factors. For these clients, the historical test can still be useful. Blank pages can be used for the time periods for which there is amnesia. Data supportive and contrary to the schema can be written and summarized for other time periods of the client's life. If there are major shifts in the quality of data before and after a period the client cannot remember, therapist and client can speculate that 'perhaps something happened during these years that led to a change in your life'. Depending upon the client's willingness and therapy goals, this exploration might lead to greater examination of the client's lost years.

Psychodrama

Psychodrama provides another therapeutic strategy for dealing with schemas in their early development context. Asking a client tore-enact an early childhood scene in which the schema was activated will often lead to intense affect in the therapy session. Activating the schema in the presence of strong affect allows the therapist to intervene with the schema in its full context, including imaginal presence of events and people who may have played a significant role in the early development of the schema. The intensity of affect which can be generated by psychodrama makes this method particularly useful for clients who otherwise avoid affect. Clients who are easily overwhelmed with affect (e.g. affect leads to dissociation) may be better suited to schema methods where affect can be modulated more easily (e.g. the continuum and historical test).

One psychodrama option is to task the client to role-play themselves as a child in an early life scene which evoked the schema of current therapy focus. The therapist can play significant others in this scene according to the directions given by the client. For example, the client can tell the therapist how a father responded to a kindergarten school project. The therapist can write down key phrases and actions of the parent and then role play these as the scene is re-enacted in the therapy session.

Following role plays, the client is asked to focus on emotions experienced, beliefs activated, and behaviour elicited or suppressed. The therapist can empathically help the client explore these parts of the experience and the meaning the client extracted from the total experience. Similarities or differences with current life events can be explored. Therapist and client can then examine alternative explanations, emotions, and behaviours that could have been experienced and expressed. This deconstructing of the experience can include additional role plays in which the client experiences the same events from the perspective of a different person (e.g. the parent or an onlooker) with the therapist role-playing the client as a child.

To support an alternative schema with its attendant emotional and behavioural responses, the client is often asked to create a new role from which to re-experience the original event. For example, the client may role play themselves as a child with the voice of his or her adult experience. In this psychodrama re-enactment, the client may assertively respond to an abusive parent, express feelings of loss or fear, or defend the legitimacy of making mistakes as part of learning. This alternative role play is often

more complex for the client to create. Therapist and client may need to write a script for what the client can say and do in this new role. Additionally, many clients need to do this new role play with the therapist a number of times before their experience has integrity for them (i.e. one in which beliefs, affect, and behaviour begin to feel real).

In cognitive therapy psychodrama is a method used to activate the entire schema experience. The goal is not cathartic experience, but rather to reevaluate the schema in the developmental context in which it originated. Further, psychodrama can provide a powerful first experience of what it would be like for the client to hold a different schema and respond to events and others in new ways. Like historical test of schema, psychodrama will not change schemas in isolation. The positive data log and continuum work will be primary methods in the day to day construction and support of new schemas. Psychodrama, however, can provide an opportunity to explore rich data surrounding the schema within a compact time period.

Core Belief Worksheets

Judy Beck (1992) has developed a Core Belief Worksheet which exemplifies the types of careful data records that can strengthen new schernas once they are partially believed. Her worksheet asks clients to write their old schema and new schema and rate the believability (from 0-100%) of each of these over the previous week. The client is instructed to record information that supports the new belief. Further, the client is asked to write down information that, at first glance, seems to support the old schema but which could be consistent with the new schema given an alternative explanation. A client with an old schema, 'I'm a failure', and a new schema, 'I'm successful', might write, 'I made a mistake using the new computer. In the past I would have concluded I was a failure. Now I see that I learn by making mistakes. I will be successful with this computer once I get more familiar with the program'.

Some type of written record to document the client's schema learning experiences is recommended. Positive data logs and other types of written therapy records provide a structured format for the client to store and begin to remember new data. The more data a client is able to perceive and store, the more likely the new schema will begin to spontaneously shape the client's perceptions, affective responses, and perceived behavioural choices.

CONCLUSION

If schemas play an important role in the maintenance of chronic problems as cognitive theory suggests, then it is critically important that therapists develop strategies for changing schemas. Clinicians report case examples which appear to demonstrate that schemas can be successfully changed (Beck *et al.*, 1990*).* This is an important finding because schema change may provide a pathway for successfully treating personality disorders and other chronic problems previously considered untreatable.

More research examining both single cases and groups with chronic diagnoses must be done to test whether schema change can account for positive outcomes in the treatment of chronic problems. In order to do this research, schema change methods must be described and specified so researchers can develop treatment standards and protocols. This paper is a step toward the clearer elucidation of several schema change methods which show promise in promoting the development of new schemas and the erosion of old.

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