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# AMERICAN SOD PRODUCERS ASSOCIATION

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Note: Most of the presentations at the 1986 Midwinter Conference did not adapt to these Proceedings as panel discussions and answers to specific questions from the audience comprised much of the educational sessions.

Dr. Richard W. Smiley's presentation entitled "Summer Patch and Necrotic Ring Spot in New York and Adjacent States - A Report of ASPA-Supported Research" appears in the May/June issue of "Turf News."

## TRANSITIONS IN OUR LIVES

Dr. Layne Longfellow  
Lecture Theatre, Inc.

Sometime around age 40 - but often as early as 35 or as late as 50 - almost every man goes through the transition we call "midlife crisis." Summoned by physical changes, by cultural pressures, or simply by mental arithmetic, an inner voice begins to whisper "Half your life is gone. Have you made the most of it? What will you do with the other half?" It is a time of profound, often intense self-examination.

Some men glide through midlife, making appropriate adjustments. But, according to Yale University psychologist Daniel Levinson, author of The Seasons of a Man's Life, about 80 percent experience "tumultuous struggles within the self and with the external world." The emotional turmoil and radical changes in behavior that frequently accompany this transition can jeopardize a marriage. It is a time notorious for separations, and it is second only to the period around age 30 for divorces.

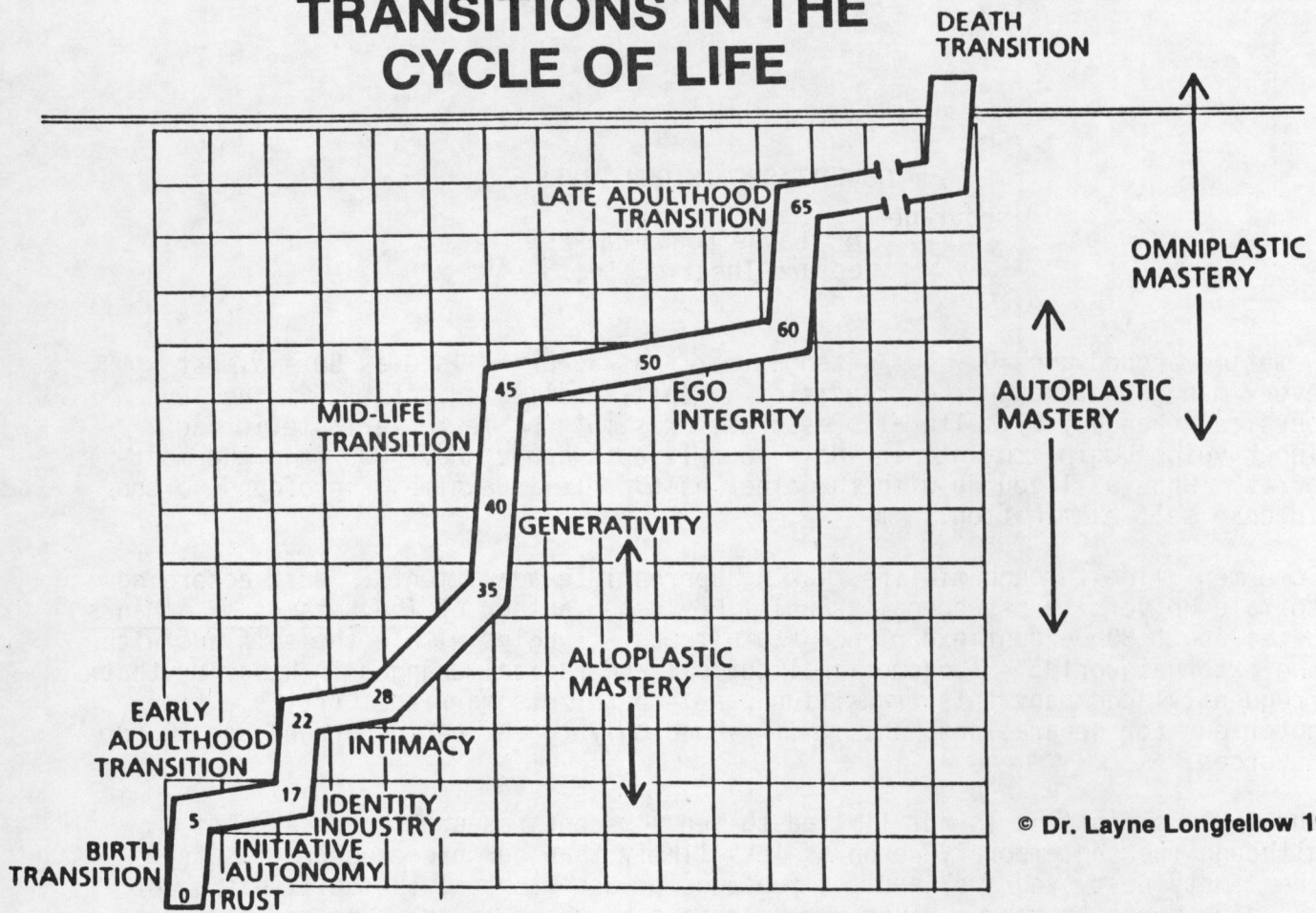
And midlife conflict is not limited to men. Recent research suggests that although the contemporary woman is less likely than her predecessor to suffer the "empty nest syndrome" and its feelings of uselessness, she still has a lot of adjustments to make. Wives who have devoted years to the care and nurturing of the family may find that they no longer feel needed - or satisfied - full time at home. Social forces have made women more aware of alternatives to homemaking - and less guilty about pursuing them - but they nevertheless often feel torn between the traditional roles and the new media image of the superachiever. Today's woman may be somewhat better prepared than her male counterpart for midlife, but she still feels insecure about competing with younger people at school or on the job, and she still may feel guilty about putting her own needs before her family's. And in the midst of these adjustments, it's all too easy to overlook what her husband is going through.

The wife's problems are intensified by the fact that the man's crisis usually involves abstract emotions he has been taught to suppress. He may not realize himself what he is going through. At the same time, he does not understand the changes his wife is experiencing. Some individuals may react by burying their own needs and rushing to their mate's rescue. Others resent and ignore the other's problems, and pursue their own interests with greater determination. Either of these routes can make matters worse.

But it doesn't have to be that way. In fact, the couple who understands the forces at work and anticipates the midlife transition can come through it with their marriage stronger than ever.

In order to navigate the midlife passage successfully and maintain a healthy and vital relationship, it is helpful to understand two very important things: first, our notions of what men and women are, and second, the nature of the "psychological contract."

# TRANSITIONS IN THE CYCLE OF LIFE



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We have all deep-seated and strongly held notions of what men and women are. These notions are formed early in life and are reinforced by our society and through our experiences. And there are definite periods during a child's psychological development when boys and girls go their separate ways and develop different competencies according to what society considers acceptable.

In early childhood the primary "tasks of life" are the same for boys and girls. In the first year an infant learns to trust (or not trust) the world, thus beginning the determination of the degree to which he or she can be intimate with others. Albert Einstein was once asked if he had one question he could ask of the universe and be sure of getting the answer, what would that question be? He replied, "I would ask, is the universe friendly?" And that is exactly the same question the newborn child is asking. Is the universe friendly?

Life is a series of changes, and change is most rapid and profound for the infant. Change is a transition from the known to the unknown and, therefore, even when the change is positive, it is frightening. The young child who learns that the world is basically friendly, that he can rely on others - that he can trust them - will likewise be more trustworthy, more secure, and have a greater capacity for intimacy later in life.

Around the age of two, toddlers begin working on autonomy, the ability to be independent and self-sufficient. This is a critical period, because the encouragement or discouragement a child receives from his parents can make the difference between becoming an adult who is clinging and unable to be separate from his spouse, or one who can achieve the interdependence necessary to a healthy marriage - the ability to function self-sufficiently while still being comfortable with the need we all have for emotional dependency. We all know the favorite game of the toddler - to run away while looking over his shoulder to make sure the parent is still there. The issue is "Can I be a separate person?," and at the same time "Will you be there to help me when I need you?"

By the time children are school age, they have entered a period of "industry" when boys and girls go their separate ways and attempt to master the tasks society has assigned them. For boys, this means developing the skills to compete in the world of work; for girls, developing an ability to be intimate and nurturing. Boys begin to learn to do the kinds of things which are highly valued in our society, and for which they will therefore be rewarded, generally with financial remuneration. Girls learn humanistic tasks, those which are recognized as necessary, but for which society offers few overt rewards.

Though society defines the context, the child begins to take some initiative, and the question he is asking is "Can I go out and create the kind of world I want?"

During this period, boys form clubs, make rules, establish hierarchies, fight for position. Girls play with dolls, worry over their hairdos, play dress-up, learn to cook. The process is one of trying to make sense of what to integrate and what not, of trying to establish a workable set of rules. And what happens next is adolescence.

Speaking of this period of life, Anna Freud once said, "I take it that it is normal for an adolescent to behave, for a considerable length of time, in an inconstant and unpredictable manner; to fight his impulses and to accept them; to ward them off successfully and to be overrun by them; to love his parents and to hate them; to revolt against his parents and to be dependent upon them; to be deeply ashamed to acknowledge his mother before others and, unexpectedly, to desire heart-to-heart talks with her; to thrive on imitation of, and identification with, others, while searching unceasingly for his own identity; to be more idealistic, artistic, generous and unselfish than he will ever be again and, simultaneously, to be the opposite, to be more egotistical, self-centered and calculating than he will ever be again." In short, it is perfectly normal for an adolescent to be crazy. It is, in fact, important for an adolescent to be crazy. Adolescence requires rebellion, extremes, turmoil. It requires separation from parents because it requires the building of identity.

Adolescence is a transitional process of profound significance. Building on what came before, while experiencing new-found freedoms, the adolescent takes the initial, unsteady steps toward mastery of his own destiny. During adolescence, boys and girls are drawn back together as they detach themselves from their parents and attach more strongly to their peers and cement the identities they will live with until the midlife transition around age 40.

In fact, midlife crisis is in large part of a letting go of the identity one forms while a teenager. This identity is so strong that it has been said that many people spend their entire lives either living up to or living down the image they had in high school. The important issues in adolescence are peers and status. And that creates problems in later life, since generally what lends status to an adolescent is not what lends status to an adult, particularly in an era of changing sexual roles.

Next comes the transition from adolescence into early adulthood. The twenties are years of establishing competence in the adult "real world," making at least a provisional commitment to a career, and developing self-reliance. It is a time for taking responsibility for one's own self, for becoming truly independent.

The period of early adulthood presents two major challenges. On the one hand is the question of forming intimate, meaningful and enduring relationships. On the other, the challenge of mastery of the external world. A complicating factor is that these two things are not generally compatible.

Psychologist David Gutman has suggested that we all go through three mastery stages in our lives: alloplastic mastery, the development of skills, competence and control over the external world; autoplasic mastery, control over the inner self, mastery of the internal world and development of intimacy and strong relationships; and omniplastic mastery, or the ability to integrate mastery of skills of the alloplastic stage with mastery of self from the autoplasic stage.

Clearly, the stage of omniplastic mastery requires that we have first successfully passed through the other two stages. Omniplastic mastery is therefore a characteristic of later life, after we have weathered the various storms and calms, joys and sorrows or growing up and making our own way in the world. But the time for mastering the other two tasks is not so clearly defined. And, apparently, the time for mastery of the internal and external worlds differs for men and women.

The general pattern for the twenties involves marriage, career and children. And from this point on the woman gets to work with intimacy, and the man gets to work with alloplastic mastery. He's in the world developing closeness. Granted, the pattern is no longer as well-defined as it once was, but the values, the expectations - what our society tells us is, after all, correct - are essentially unchanged from earlier times.

The point is that by the time the couple reaches their early thirties, the man and woman have spent a decade or so doing different things. He's out in the world getting promotions and getting raises and getting his name on the door. She's at home raising children and caring for her husband. Each has developed expectations of the other, and of themselves, that have been preconditioned by society.

A crisis stage hits about age 30. It is a period of uncertainty, characterized by questioning what one is doing and why. An active social life starts going downhill during this period. Marital dissatisfaction increases. The spouse may start being seen as an obstacle rather than an asset. Infidelity becomes more prevalent. Divorces are more common. The couple who got married with all the best intentions in the world, who split up the tasks with all the best intentions in the world, who got married because they had so very much in common, are now beginning to feel that there is something missing from their lives.

And they're right. She has not had the opportunity to develop alloplastic mastery, competence in the world. He has been relatively denied intimacy. It is not surprising that the decision to divide up the tasks and lead different lives, made in the early twenties, with all the best intentions in the world, comes home to roost in the early-to-mid-thirties.

Men who devote their early adult lives to "making it" (achieving status and success) at the expense of their personal lives enter midlife regretting the lack of intimacy in their personal relationships. Conversely, women who have concentrated on home and family may find that they have relatively satisfying personal lives and have developed many competencies, but not the ones that are granted status and respect. They both discover that they've spent their lives following different paths, and when they begin to reorder their priorities those paths cross as they meet each other going in the opposite direction.

The midlife crisis comes in the late thirties and early forties. It is a time of instability that researchers have likened to a "second adolescence." It is, in fact, referred to by some as "middlescence." There is a realization that life is not forever and time is running out. Values are confronted as the midlifer ponders if there is time to make a change. Men and women alike begin to ask themselves what their lives are all about, what do they really want from life, what they have that they want to keep and what they don't have that they want. They come to the realization that they have lived the first half of their lives according to a script that was written by somebody else, but that they can take control and choose how to live the last half.

The midlife threat to the marriage bond is a function of both the differing competencies and expectations of the spouses, and the profound re-examination that they are making of their personal lives. What might be called the "great social dilemma" of the 1980's is that while most jobs today can be done by men and women alike, we are still conditioned to develop two sets of competencies - and we attach status and respect to just the "male" skills of coping in the world of work. We have assigned all the remunerative functions to men and afforded those a good deal of respect, and we have assigned humanistic functions, which have relatively little status, primarily to women. The irony is that the humanistic functions are those which literally knit our social fabric together. This discrepancy is very upsetting to our all-important male-female interdependency relationships. And one of the most significant manifestations of this rigid separation of roles is that it is particularly difficult for men to express their emotional needs. That difficulty results in the violation of

the unspoken "psychological contracts" in male-female relationships. And if unspoken emotional needs are not divined and fulfilled, the outcome is separation, alienation and distance.

Every interaction between human beings takes place according to certain rules. There are agreements about what can be done and what cannot. About what can be said and what can't. About how we will say and do what we say and do and how we won't. And these rules by which relationships operate are almost always, and almost entirely, unspoken. The unspoken agreement between people that defines what their relationship is like and how it should work is what constitutes a psychological contract.

Like legal contracts, psychological contracts can be made between any individuals, groups of people, or between individuals and groups in which there is mutual need, in which each party has something to give and each has something to gain. But there are many ways in which psychological contracts differ dramatically from legal contracts.

In the first place, the fundamental defining characteristic of the psychological contract is that it is unspoken. Psychological contracts are implicit, unwritten, un verbalized. In addition, psychological contracts are generally unconscious as well. In most cases, we don't even know, explicitly, what the rules are by which we operate. But all of those unspoken and often unexamined expectations that we have of every relationship, whether it be on the job, in a social group, or in a marriage, are no less binding, in their own way, and no less significant to our lives.

Since psychological contracts are unspoken, they cannot be arrived at through the same painstaking process of negotiation that characterizes the establishment of a legal contract. Therefore, the probability that the contracting parties' versions of the contract may differ is quite high. This can result in misunderstandings that are not apparent until one of the parties violates the other's understanding of the agreement. One of the problems with psychological contracts is that you never know for sure whether or not you are living up to your part of the agreement.

This is not to say, however, that psychological contracts are not negotiable. In fact, we are involved in a continuous process of negotiation in psychological contracts. Again unlike legal contracts, psychological contracts are dynamic. Legal contracts are struck for the purpose of contributing permanence to an agreement. They cannot be altered, unilaterally above all. Psychological contracts are quite different. Psychological contracts change almost continuously. There is a continuous process of negotiation going on because people change and the way they are with other people changes, and circumstances change and expectations change. Psychological contracts are not meant to be binding in the inflexible way that legal contracts are, but rather bind relationships in a web of expectations that are influenced by time and place, personal history and circumstance, mood and feeling, and mutual need.

There are two principal means through which psychological contracts are negotiated - through body language and unconscious metaphor.

## CHARACTERISTICS OF THE MIDLIFE TRANSITION

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### Decrease

- For me marriage has been a good thing
- There is still plenty of time left to do most of the things I want to do
- I like a very active social life

### Increase

- My greatest concern is my health
  - I don't make enough money to do what I want
  - It's too late to make any major changes in my career
  - Life doesn't change much from year to year
  - I try to be satisfied with what I have and not to think so much about the things I probably won't be able to get
  - My personality is pretty well set
  - I regret my mistakes in rearing my children
  - My parents are the cause of many of my problems
- 

## CATALYSTS FOR ADULT LIFE TRANSITIONS

**Mentor**  
**Life Dream**  
**Special Person**

**Generativity**  
**Defined Life Goals**

**Relationships**  
**(Enduring)**  
**(Intimate)**

**Inner Meaning**

Age: \_\_\_\_\_  
20                      30                      40                      50+

Effective Adaptation Techniques

|          |              |
|----------|--------------|
| Altruism | Sublimation  |
| Intimacy | Suppression  |
| Humor    | Anticipation |

Research has shown that only approximately seven percent of the communication in a given message between people is verbal. Over ninety percent is non-verbal. And that part is made up of tone of voice, speech patterns, body posture, mannerisms, gestures, facial expressions and the like. We are all picking up those messages from each other all the time, and the striking thing about it is that we are largely unaware of it. To some extent we consciously watch for cues and feedback from other people and that does have an impact on us. That impact is magnified by the non-conscious communications we are also monitoring. This enormous "body" of communication allows us to continually revise our expectations of the other person, figure out the expectations they have of us, and so on.

Another means of negotiating psychological contracts is through unconscious metaphor. Unconscious metaphors allow us to talk about something without really talking about it. What this means is that our conversations, whatever the topic, may have meaning and relevance on a conscious level, but at the same time may have meaning on an unconscious level as well. The wife who says "I have a headache" may indeed have a headache, but may also be saying to her husband that she had a difficult day with the children and he is not being sufficiently attentive to her needs, is not meeting her current expectations of the relationship.

A final point about contract negotiations is that they often take the form of arguments, which usually miss the point entirely. Arguments are a function of the frustration produced when expectations are not met. And when those expectations are unspoken as well as unconscious, it is very difficult to determine the source of the frustration. That frustration then turns to anger, and the anger gets expressed around whatever thoughts we happen to be conscious of in that situation at that moment. The anger is a way of releasing emotion built up inside of us when our expectations are not being met.

These, then, are the functional characteristics of the psychological contract. But what are the issues that psychological contracts deal with? Legal contracts deal with material issues - money, time, physical needs. But the psychological contract, on the other hand, focuses on psychological needs, and chief among these are dependency, psychological distance, and change.

The issue of dependency is very highly charged. For most people, the word "dependent" evokes fantasies ranging from the infant to a bed-ridden patient to a person on welfare whom others consider lazy. Strong feelings are associated with such fantasies. One reason for our strong reactions to dependency is that it rekindles old memories and conflicts from our own childhood. These are memories, usually unconscious, about a time in our lives when we were very dependent and painfully helpless to even turn over or feed ourselves. But as we grew, we learned that it was good to progress from a state of dependency to a state of increasing independence. In fact we were shamed if we showed even the slightest regression. So most of our lives we have worked hard to avoid being dependent. In all honesty, however, we can see that we haven't always worked as hard to **be** independent as we have worked to **appear** independent. In fact, we all have dependency needs, but facing one's dependency is one of the most painful experiences and one of the greatest fears that people have. A useful solution for dependency conflicts

is to become interdependent with others, to be dependent on others so long as they are dependent on us. There is mutual need and no exploitation of dependency.

The second crucial issue that the psychological contract deals with is psychological distance. Sigmund Freud once used an example from Schopenhauer to describe psychological distance. Schopenhauer discussed the problem of two porcupines on a cold night. Each animal was faced with the challenge of getting close enough to the other to get warm, but not so close that he got stuck by the other's quills. Similarly, human beings face that same problem in their relationships. How can we get close enough to share our warmth and love and concern without having to suffer too much of each other's aggression?

Each of us has our own critical psychological distance. We choose friends and marital partners who are compatible psychologically, yet who don't get so close as to threaten our personal space or safety or privacy. Psychological distance is relatively stable, but is not static and responds to the needs of the individual. The issue of psychological distance embodies the issues of privacy and self-control. To get closer to someone else and permit them to get closer to us means we lose some of our privacy. Closeness might arouse emotions of fear or anger. If we reveal our feelings, we might come up against some of society's prohibitions, and we may fear others' reactions. We are quite concerned about being stuck or sticking others if we get too close.

The psychological contract deals with a third area of interpersonal significance, the issue of change. The parties to the psychological contract must appreciate that change is essential for growth and survival, but that change also involves pain. The pain of change is the inevitable loss that accompanies change. This is true even when the change is desirable. Moving from a less desirable to a more desirable state still means that something will be lost, and missed.

Each party to the contract requires that the other be sensitive to his need for and difficulty with change. Individuals can refuse to change, and thus compromise the growth of the relationship and of the other party, or each person can help the other through necessary changes with understanding, caring, and involvement. Such mutual support follows when each party understands that change and support for change is legitimate. Neither can afford to consider that since change is painful, no one will change. Each merely must recognize the price that has to be paid for change.

There is one final characteristic of psychological contracts that must be mentioned before turning to questions of what causes them, where do they come from, how they are applied and how they are maintained. This is the issue of reciprocation.

When the psychological contract works well, so that both sides are equally satisfied and satisfying, reciprocation occurs. Each side honors the dependency needs of the other, a comfortable psychological distance is being maintained, and both sides are working together to implement the necessary changes. It might seem, then, that the goal of a psychological contract is a proper balance between factors that will lead to a reciprocal contract. Under

most circumstances, this is correct. Reciprocation is a desirable quality for contracts in marriages and families, indeed in all our human relationships. There are instances, however, where the comfort of the reciprocal contract is hiding and perpetuating some very difficult problems. In short, there is healthy reciprocation and unhealthy reciprocation.

One of the most dramatic and tragic examples of unhealthy reciprocation is a common contract between an alcoholic and his wife. On his side, the alcoholic in essence says to his wife, "I'm frightened of being successful, but at the same time I have strong feelings that I should be successful. I can live with this conflict if I appear to myself and those around me to be trying hard to be successful but always failing at the last minute, due to something over which I have no control. This dilemma permeates my life, so I request that you encourage me not to drink, to berate and abuse me when I do drink. But as soon as I've been on the wagon for a while and am in danger of being successful, you disappoint me, or encourage me to resume drinking in such a way that I can't refuse."

The alcoholic's wife complies in a number of ways. One good example is the wife who gives her husband who hasn't had a drink in several months a bottle of expensive whiskey for Christmas. So the wife from her side of the contract is saying something like, "I have a low opinion of myself, and one way I can help myself feel better is to have someone I can take care of. It is even better if that person abuses me, for then I can feel noble and useful and good. But I have difficulty if the weak person gets strong again, for then I am faced with my feelings about strong, adequate people, because I'm so inadequate. So I will be happy to comply with your contract since I need someone who is constantly down and who constantly needs help and who constantly promises to get well but who always disappoints me at the last minute."

Now not all alcoholic relationships are just like this, of course, but it is a common enough pattern to serve as an example of a relationship that is reciprocal, but is satisfying unhealthy psychological needs and which keeps the partners in chaos.

Where, then, do psychological contracts come from? How do we find ourselves in the middle of something without even knowing its origin? The answer is simple: psychological contracts reflect our underlying human nature. We all have dependency needs, needs of distance and closeness, all the issues that are embodied in the contract. There is no choice as to whether we will establish these contracts or not. The choice lies in how we will manage them and what kinds of contracts we will enter into.

There seem to be two principal sources for the particular expectations that we bring to relationships; one is our personal history and the other is our stereotypes and the "halo effect." An important thing about each is that they antedate - they precede - any written contract or any real relationship with the person. They have very little to do with the other party to the present contract. They have almost entirely to do with our own perceptions.

Stereotyping is a practice whereby we ascribe attributes to a person on the basis of one observable attribute, such as skin color or mode of dress. It is easy to see how we might enter into a psychological contract with a person whom we have stereotyped and then find that their understanding of the contract is quite different from ours. The process is simply that we place expectations on them on the basis of all the things that we **think** must be true of them. Since our image of them is our own fantasy to begin with, there's little likelihood that they will live up to our expectations.

The halo effect is similar. A common human trait is to believe that if an individual has one trait we particularly admire, it follows that they will have all the other traits we admire as well. We create a halo for them and this tendency is difficult to overcome even through experience to the contrary.

The other principal source of unspoken expectations is personal history. Individuals bring to their psychological contracts expectations that are a function of their cultural conditioning and personal experiences. These expectations are developed before the contracting parties meet and are, of course, a powerful influence on the nature of the contract. These expectations are, indeed, essential elements of the individual's notion of what men and women are, as well as their own self-image vis-a-vis other people.

These, then, are the forces at work in the marriage, the differing developmental experiences, the contrary perspective on tasks, and the unique expectations that each partner carries into the relationships at the "crisis of midlife."

Experts agree that the keys to weathering the midlife transition are understanding, open and honest communication, loving support, and tolerance. These skills cannot create love, but they can keep love from being undone. Successful relationships are the ones to which both partners are committed, committed to their own needs, the needs of the other, and to the changes that are inevitable over time, the changes that they make together.

The fruitful way of managing psychological contracts is to try to become aware of them and to make them explicit; to recognize and accept the needs involved in such contracts; and to negotiate them carefully and caringly with each other. Unspoken expectations can be spoken, and when they are they tend to lose much of their demanding quality. They become invitations, invitations to negotiation, invitations to the dance, and a fascinating dance it is.

At midlife the deeper yearnings of the soul begin to demand attention. Old, comfortable behavior patterns may become obsolete. But to resist the change would be like trying to keep a bud closed instead of enjoying the flower. Marriage in midlife requires adjustments, but that can lead to new dreams, new values and new zest.

In Chinese the character for crisis is a combination of two other words: danger and opportunity. Midlife is made up of the same ingredients. Which one it becomes - danger or opportunity- depends largely on how each person sees it.

# ADULT LIFE TRANSITIONS

Women: Family ..... Career

Leaving Home  
Seeking a Partner  
Unlimited Ambition

External Recognition

Limited Goals  
(Disillusion)  
(Stagnation)  
What's It All About?

Empty Nest  
Retirement  
Death

Men: Career ..... Family

Age: \_\_\_\_\_  
20                                  30                                  40                                  50+

## SAFETY AND SAVINGS ON WORKERS' COMPENSATION

Several months ago your Board voted its approval of Casualty Reciprocal Exchange as the workers' compensation insurer for this Association. It is a privilege to have this opportunity to visit.

The Dodson Group, of which CRE is a member, was formed in 1900 to write fire insurance. In 1912 a new line of insurance called workmen's compensation was introduced to this country from Europe. In that same year Casualty Reciprocal Exchange was formed. Over the past seventy-four years we have served hundreds of Associations and take pride in what has been accomplished. That experience and pride prompts us to believe we can give better service at a better price than anyone in the business.

Workers' compensation is a highly regulated line of insurance introduced in all states for the exclusive benefit of the injured worker. The benefits to be paid are spelled out by the laws of your particular state. An administrative body is there to make certain the worker receives those benefits to which he is entitled on the date he should receive them. Some of you pay more for your insurance because your state has provided a higher benefit than your neighbor. Some will pay more because your loss record is worse than that of your competitor next door. You are aware workers' compensation is experience rated and your premium will be influenced by the number and severity of your claims.

You have banded together for your mutual benefit. As your insurer, we are firmly convinced we can make a substantial contribution to your team. Insurance premiums are no small part of your overhead. If, working together, we can reduce some of those costs your profit potential has been increased. Let's consider some of the steps we can take to assist you.

First, when you insure with us an experienced safety representative will visit your premises. He will inspect those premises and your equipment then make recommendations for a safer work environment. He is available for counsel at all times as his major function is to help you prevent accidents. He can provide literature, conduct meetings on safety and work with you toward improvement. He is as close as your telephone.

Second, it is an historical fact the faster a claim is paid the lower its cost. Your claims representative will be located in your area and can move quickly to dispose of claims against you. On the average these representatives have worked with us for thirty-five years. Each is available to you for consultation on claim matters.

Third, the cost of a claim is directly related to the length of disability. Getting the injured worker back on the job as quickly as possible is the only way to reduce claim costs. The best medical and rehabilitation facilities are used to accomplish this result.

The greatest reward of all is produced through a team effort. If you are sensitive to safety and we are sensitive to the needs of your injured worker, your costs can be dramatically reduced. At the end of each policy period we total the premiums then subtract the losses and expenses. The balance is returned to you. It is not uncommon for the members of an Association to receive thirty or forty percent of their premium dollar as a savings. The term "savings" is used because the amount returned is money saved through our collective effort. While we have neither the right nor desire to tell you how to run your business we offer our services in the area of loss control on a continuing basis.

Experience makes us acutely aware of the pride to be shared with an Association when the members find their insurance costs reduced through a communal venture. Together we can have a great impact on your costs of doing business. We thank you for giving us the opportunity to prove what can be done on your behalf.

## INTEGRATING SOIL AND PLANT NUTRIENT DATA INTO A SOD OPERATION

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A modern sod farmer operates in an ever-changing market. Total product demand and changing consumer taste plus marketing and operational management place heavy demands on time. Thus, detailed attention to soil characteristics, plant nutrient levels, and fertilizer effectiveness is frequently lacking. As productivity begins to decline, heavier applications of "standard" fertilizer seem to produce ever less results.

This situation is unfortunate but can be reversed, in some cases with little or no increased cost of production. Integrating soil and plant nutrient data into a sod farming operation offers a number of potential advantages, including:

- °reduced fertilizer material costs.
- °improved sod quality.
- °improved soil fertility and productivity.
- °reduction in potential environmental problems.

Obviously, laboratory analyses of soil samples should include primary nutrients, pH, and buffer pH. In addition, secondary nutrients, organic matter and cation exchange capacity further improve an operator's understanding of his soil's capability to produce a quality product. Tests for regional micronutrient deficiencies may also be advisable, particularly if nutrient deficiency symptoms persist.

Plant tissue analyses are particularly valuable if soil organic matter and cation exchange capacity levels are low. In this event, heavy applications of fertilizer do not guarantee that the necessary nutrients are available to the plant. If test results remain abnormally low with periodic fertilizer applications, then such applications are probably a source of environmental contamination, rather than a source of plant food.

Low soil organic matter levels can be corrected with periodic applications of municipal sewage sludge, animal wastes, or by incorporation of a green manure program into the sod rotation. These techniques can improve soil moisture holding capacity and soil structure. However, sludge applications can only be used if necessary permitting requirements have been met and these requirements vary by state. Increases in soil organic matter levels will be reflected in increased cation exchange capacity values.

Tulsa Grass and Sod has been monitoring soil and plant nutrient levels on its farms at Bixby and Oklahoma City, Oklahoma for two years and has seen approximately a 25 percent increase in productivity. In addition, product quality has improved significantly with modifications in the fertility management program. These modifications have also resulted in a reduction in fertilizer material costs on a per acre basis.

Some of the Bixby farms have received applications of City of Tulsa sewage sludge and results in the form of increased productivity and improved color of bermudagrass were obvious the following Spring. Application of animal wastes to improve the predominantly light-colored sandy loam soils of these farms is also practiced.

Test plots have been used to assess herbicide effectiveness and side effects, as well as to evaluate various inorganic fertilizers. As a result, weed control is more effective and less organic fertilizer is necessary to produce an equivalent quantity of sod. Reduction of nitrate fertilizer usage has probably reduced the possibility of local environmental contamination from this source.

Perhaps the most significant aspect of the increased productivity and improved product quality has been the compliments from buyers and continued growth in sod sales. These, alone, make the extra work of soil and plant sampling and testing worth the effort.

