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AN INVESTMENT MODEL OF DEPRESSIVE RESISTANCE

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A functional utility model of depressive resistance is advanced, drawing upon modern portfolio theory of how individuals decide to allocate resources**.** According to this microeconomic model, depressed individuals believe they have few present and future resources and low utility of gain in a market that is volatile and downward sloping. Depression is viewed as a strategy to avoid further loss, resulting in active attempts to resist change as evidenced in motivated negative cognition. Depressives take a risk-averse strategy to minimize loss, utilizing high stop-loss criteria and rejecting optimism as a high exposure position. Unlike optimistic individuals who believe that there are many replications over a long duration to obtain gain, depressives have low diversification, high information demands, and utilize hedging, waiting, hiding and other tactics to minimize risk.

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Cognitive models of depression have focused on information processing biases (Beck et al., 1979), negative explanatory style (Abramson, Seligman, & Teasdale, 1978), the perception of non-contingency (Seligman, 1975), deficits in self-regulation and self-control (Rehm, 1970; 1990), and excessive self-focus (Carver & Scheier, 1981; Nolen-Hoecksema, 1987). Although these cognitive models have proven to be useful in developing therapeutic interventions and programmatic research, these models do not directly address a central issue of depression---specifically, the process of decision-making and the motivation to change.

Characteristic of depression is the apparent low motivation, low energy, indecisiveness and self-criticism that constitute a core of resistance to change. Beck's schematic model is useful in identifying the negative triad as a resistant barrier to change---namely, the depressive's negative view of self, experience and the future undermines his motivation to modify his behavior. The proposed model extends the schematic processing model. I propose that the schematic processing model does not sufficiently explain active resistance to change as seen in chronic and refractory depressions. The theoretical model proposed here adapts the schematic model as the foundation for a decision-making model based on individual differences in the perception of utility.

The model proposed here is an ***investment model*** of decision-making drawn from ***modern portfolio theory.*** According to this model, individuals make decisions about how to allocate their resources based on their estimate of present and future resources available, tolerance for risk, and probability and value of gains and losses. In the present article, I shall argue that depressed individuals resist change, and hesitate in making decisions, because of their specific portfolio theories. I shall elaborate this model by examining the *depressive paradox,* information search biases in decision-making, depressive evaluations of losses, ambivalence about gains, and protection against risk.

Depressive Paradoxes

A commonplace observation in the animal and human literature is that organisms are motivated to pursue rewards and avoid punishments. The opportunity to achieve an increase in rewards should increase the probability of behavior. Yet a cursory observation of the depressed patient suggests that he will often pass on the opportunity to engage in positive behavior and, indeed, may commit his time to apparently self-punitive behaviors such as self-criticism or depressive rumination. Should we conclude from this that depressives are the exception to the *law of effect*---that is, unlike pigeons, rats and non-depressed humans, they do not pursue rewarding behavior, but rather pursue a masochistic goal? Indeed, a similar observation led Freud (1917) to conclude that depression was anger turned inward--or, simply, a form of psychological masochism resulting from an overly repressive superego.

Another observation that appears, at first glance, to defy general learning theory principles is that depressed people, who are in a higher state of deprivation, are in fact *less motivated* than non-depressed people to engage in positives. All students of operant conditioning know that it is useful to deprive the organism (usually, of food) in order to increase the strength and frequency of responding. Yet depressed individuals appear to defy this law of deprivation---their response level is *lower* than that of non-depressed people.

I shall argue that a solution to these apparent paradoxes is that decisions to respond are based on *expectancies* of future outcomes. Past reinforcement (or extinction) histories may be important, but the cognitive mediation of depression determines how the information about past history is utilized in making future predictions about outcomes. I shall argue that depressives develop strategies to avoid loss that inhibit them in taking the "risk" necessary in changing. Indeed, depression may be viewed as a *risk-management strategy.*

Maximization and Minimization Strategies

The depressive paradox can be clarified if we consider the assumptions guiding optimistic and pessimistic decision-makers. Consider Jones who is considering an investment and who believes that he has substantial assets and substantial future earning potential. He is

presented with the option of investing $8000 with a moderate probability of making a 50% return on his investment. He also believes that, even if he does not make 50%, he has a good probability of making some profit and very low probability of losing his entire investment. Jones enjoys the things that he buys with his wealth and he enjoys playing the game of investments. Given the offer of this investment, he reasons that he has substantial resources to absorb the unlikely losses that might occur. He takes the investment.

In contrast to our optimistic, risk-taking Mr. Jones, unfortunate Mr. Smith *believes* he is down to his last $100. He is offered an investment of $80, with a possibility of gaining $40 (a 50% return on his investment). Smith believes that he has little likelihood of gaining employment and he believes that he has bills coming due next week. Moreover, he attributes his dire financial straits to *foolish investments* that recently headed south. Jones is a "nervous nellie" and passes on this opportunity to invest.

These two investors---optimistic Jones and pessimistic Smith--- operate from what they believe are rational considerations *given the information and goals* that they attempt to pursue. The optimist pursues a maximization strategy---that is, a growth strategy---because he is willing to take risks. The pessimist---our "depressed" Mr. Smith---believes that his *minimization* strategy is rational, since his goal is to *avoid further losses.* The depressive paradox describes the pessimistic, but apparently rational Mr. Smith. Perhaps Smith is incorrect (or correct) about his evaluation of his current and future resources, perhaps he is unduly negative of his chances of gaining, but there is an internal logic that tells him that he cannot absorb any further losses. His "self-protective" strategy instructs him to avoid change unless there is close to certainty of gaining.

In the pages to follow, I shall outline the elements of a depressive style of decision-making. I refer to this as an *investment model* since decision-makers are often in the position of determining how they will allocate resources for the purpose of achieving gains or protecting against loss. Modern portfolio theories in finance theory are useful in providing us with the concepts necessary to describe the strategy of investment of optimistic and pessimistic players. First, I shall indicate how negative schemas are formed and maintained at a structurally primitive level. Second, these schemas "inform" decision-making in depression by constraining information search and retrieval. Third, and most importantly for the investment model, I shall indicate how depression is not simply a distortion or bias in thinking, but rather a *strategy of adaptation.*

Schematic Biases and Developmental Regression

Beck (1976; Beck et al. , 1979; Leahy & Beck, 1988) has proposed that depression is characterized by negative schemas about self and others which, during the depression, are activated and become predominant in the processing of information. These schemas often are formed during early childhood and may be characterized by the qualities of preoperational thinking, such as egocentrism, centration, magical thinking, moral realism, rigidity and dichotomization (Leahy, 1995; 1996; in press). Because of the primitive structural qualities of early maladaptive schemas, many depressives (especially, chronically depressed individuals) have difficulty treating their thinking as an object of thought. The ability to identify and test negative thoughts, especially deeply embedded assumptions and schemas, requires abilities of *metacogniton*---for example, the ability to decenter from the self and treat one's thoughts and feelings as objects of thoughts or potential rather than necessary realities. Developmental social-

cognitive research indicates that very young children are unable to engage in this meta-cognitive process (Leahy, 1985; Selman, 1980). Indeed, similar to the preoperational child, the depressive experiences his negative thoughts as if they *are* reality and his emotions as if this is the only way one could feel. For the structurally regressed schema, there appears to be no alternative and no escape from the present construction of reality.

Given the predominance of early maladaptive schemas, depressives are overinclusive of negatives and underinclusive of positives. Schemata are self-sustaining information systems that reconfirm themselves through selective attention, recall and recognition of information consistent with the schema. Because these schemata are often formed at a preoperational level of intelligence, the individual has difficulty decentering or distancing himself from his perspective and has difficulty recognizing how his actions and choices have confirmed the schema. Of course the task of cognitive therapy is to suggest "alternative realities", but the depressive is often captured by his own construction of reality.

Schema theory suggests several reasons why negative schemata are maintained: 1) Schemas are structurally limited, lacking the ability to decenter---that is, lacking metacognitive self-reflection; 2) schemas are selective information processing systems which are self-fulfilling or self-verifying; 3) schemas are not directly challenged because of compensations and avoidance; and 4) schemas are reconfirmed by negative life-events. Although these structural and strategic factors are important in maintaining negativity, they do not sufficiently explain active efforts of resistance to change. For example, how would schema theory explain why patients would actively defend a negative schema, responding with anger and further rigidity when negativity is challenged? The proposed model of resistance extends schema theory to include what I refer to as *motivated negative cognition*---that is, cognitive (and behavioral) tactics and strategies that are used to maintain and defend a negative schema. I shall attempt to demonstrate that depressives often believe that abandoning a negative schema exposes them to further loss.

Because of a long history of reconfirming the negative schema, recurrent depressive episodes and dysthymia are often characterized by resistance to change. The therapist often finds that the patient generates apparently ad hoc, seemingly irrational, reasons not to change, justifying his procrastination and refusal to take risks. Although one can recognize the power of the schema for information processing, it is not altogether obvious from schema theory why the patient should *resist* modification of negative thinking. Guidano and Liotti (1983) have suggested that these early maladaptive schemas are "guarded" by a "protective belt" of defensive maneuvers, although it is not clear why one would want to guard a negative belief. I shall propose that the "protective belt" may be understood as an attempt to guard against further loss (a view consistent with Guidano and Liotti) and that the patient adapts a strategy of investment and pessimism that he believes protects him from devastation. To advance this position, I have drawn on neoclassical microeconomic models of investment strategies.

Strategic Pessimism

The argument advanced in this article is that depressed individuals often resist change because they believe that they cannot absorb the costs of further losses. Their pessimism is a consequence of the experience of recent negative life events and underlying negative schemata, which direct their attention to negatives rather than positives. The proposed model is consistent with Beck's cognitive model (that is, negative schemata are assumed), Abramson, Seligman and

Teasdale's attribution model (that is, explanatory styles result in low self-esteem), and life-event and social skills models, such as Lewinsohn's (that is, life events constitute losses and low skills reflect estimation of personal resources). Many depressed individuals have *some* reason for thinking negatively, but their negative schemata and negative explanatory style further exacerbate this negativity.

Evolutionary psychiatry suggests that what appear to be maladaptive modes of response have, indeed, had evolutionary value (Wenegrat, 1990). For example, innate fears of heights, strangers, the dark, or animals may confer a self-protective function against real danger in primitive environments (Bowlby, 1968; Marks, 1990). Similarly, one can argue that depression and pessimism are sometimes adaptive (perhaps in "small doses"). For example, it might be useful to give up in the face of failure, to question your ability when events turn out badly so that you can correct yourself, or even to adapt a submissive posture in a group (Gardner, 1982; Price & Sloman, 1987). Indeed, excessive optimism, as evidenced in mania, can be exceptionally destructive (Leahy & Beck, 1988). Depressive pessimism is not always a *distortion* in thinking, but rather a *bias*: sometimes the worst actually happens and it is wise to be prepared for it.

The investment model takes these cognitive-behavioral models a step further. I shall argue that many depressed people assess their current and future resources as negative and view the world as a poor source of rewards, most of which are viewed as uncontrollable and unpredictable. ***Given this negative triad of self, experience and future, the depressive attempts to protect against further losses.*** He adapts pessimism as a strategy which, be believes, will help him conserve his meager resources and will protect him against losses which he believes will be devastating. As a consequence, he takes an ambivalent position regarding hope, since hope may lead him to "foolhardy" exposure to greater losses. ***The depressive guards against hope in order to protect himself from loss.*** Contrary to the psychodynamic model that suggests that depression is anger turned inward or a form of masochism, the investment model proposes that depressives are so undermined by negatives that they direct most decision-making to avoid further negatives. They are exquisitely *risk averse* as a strategy to avoid losses which they believe will devastate them.

Portfolio Theories

The application of microeconomic concepts to mundane decision-making has been advanced by Nobel-prize laureate Gary Becker and his colleagues. Decision-makers calculate costs and benefits, utilizing rational models, in making marital choices, criminal behavior, discrimination, and religious preference (Becker, 1976; Tomassi & Ierulli, 1995). Similarly, operant conditioning models have been compared to neoclassical models of economic decision (Schwartz, 1980). The investment model proposed here argues that individuals maintain strategies as to how they should invest their resources. A portfolio represents a variety of investment tools in finance theory (e.g., stocks, bonds, cash) and, as applied here, a portfolio represents a variety of *behaviors*---similar to a "behavioral repertoire" or "hierarchy of responses".

Individual portfolio theories represent the investor's understanding of his current and future resources, the perception of market variation or volatility, the investment goal (growth, conservative self-protection or income generation), the functional utility of gains ("how much will this gain be valued?"), the opportunity to replicate investments ("Is this a single opportunity or will I be able to "play many hands"?"), the duration of investing, and the tolerance of risk

(Bodie, Kane & Marcus, 1996). For a variety of reasons that will become more clear in the subsequent sections of this article, depressed and non-depressed individuals hold different portfolio theories. These are depicted in Table 1 below.

Insert Table 1 about here

Table 1 illustrates the phenomenological differences between pessimists and optimists. From Beck's schema theory of depression and from the model of the negative triad (Beck et al., 1979), we can see that the depressed individual may underestimate his current and future positives. His negative filter, overgeneralization, negative prediction and discounting the positives, all result in his belief that he has few assets available and a bleak future. Because depressives are anhedonic and, therefore, derive little pleasure from rewards, and because they discount their positives, there is low functional utility of gains. He believes he has little and he has little to gain.

Losses for the depressive have added "negative utility" because they are overgeneralized, exaggerated, and personally internalized (Abramson et al., 1978; Beck et al., 1979). When the depressive loses, he adds to the loss the cost of self-criticism. Compared to the non-depressed individual who attempts to absorb the cost of loss as part of playing the game, the depressed individual magnifies the loss through his self-recrimination. As a result of this overvaluation of loss, the depressive's strategy is to minimize loss at all costs. We shall now examine how depressives process information about loss and gain and the decision-rules that guide their mundane investments.

Limited Search

Depressive schematic processing does not allow the individual to engage in an exhaustive search of alternatives, information, or current resources. "Ideal" rational decision-making suggests that one consider all alternatives, weigh the costs and benefits, consider all the information about the current situation and choose the "best" alternative (Baron, 1994; Janis & Mann, 1977). However, almost all decision-makers are "imperfect", since exhaustive searches of alternatives would be so time-consuming that no decisions would be possible. Search rules are employed. For example, when you go to a restaurant for a quick lunch, it is unlikely that you compare the costs and benefits of every entree. Rather, you have a selective search question---for example, it might be, "Do they have a chicken salad sandwich?" Once the search question is answered affirmatively, the search is discontinued.

Depressive searches are similarly limited and they are guided by the "default question"---namely, "How can I lose?" Cost is the default. Once this is answered affirmatively, future questions about gains overshadowing losses are avoided. The search is *myopic* in that the focus is on the "up-front costs"--- that is, the effort or risk that one incurs in order to achieve a gain. Thus, much of depressive avoidance appears to conflict with purposive behavior of seeking rewards. Because losses are overvalued, the depressive searches for reasons not to change. "Is it possible that I could lose", "Do I need more information?" or "Could I regret this action" all enter into the inquiry, inevitably leading to affirmative conclusions and further avoidance.

Waiting is often viewed as a positive alternative, since waiting provides the depressive with the perceived opportunity of gaining more information, reducing risk, and acquiring the "motivation" or desire to act. To the non-depressed individual, waiting can be viewed as a cost,

since opportunities to "invest" or act are foregone. (This is why investors demand interest on their investments---they have opportunity costs of delaying the enjoyment of their capital.) As the depressive waits, searching for reasons not to change and demanding certainty in an uncertain world, opportunities are missed. Although his immediate goal in waiting was to protect against "risk", his procrastination then becomes a further focus of his self-criticism.

The limited search, or biased search, of the depressive also leads him to undervalue current and future resources. Rather than directing his search to "How much do I have already?", "How much do I have to absorb costs?", or "How much can I gain in the future?", the depressive investor myopically searches for losses that will draw down his perceived limited resources. Consequently, the *costs have high negative utility*, and are to be avoided at all cost.

Because the schema is focused on the negative, the depressive search seeks to find reasons *not to act.* An example of this "searching for reasons not to change" is a woman who feared doing poorly at work and, therefore, generated ad hoc reasons not to look for a job. Another example was a commodity trader who feared making mistakes and who continually sought reasons why he should not take particular trades. In his case, the consequences of his trading were decreased by having him do "paper trades" (rather than actual monetary trades), giving him the opportunity to immunize himself against loss. By practicing losing and gaining on paper trades, he was able to recognize that the "pay-off" in trading came with replications and duration.

Loss Orientation

Many of the cognitive distortions of depression emphasize the severity, personal implication and generality of losses. For example, the depressive attributes loss to a personal deficit of his that is stable, losses are catastrophized, and losses are generalized to other areas of his life. The depressive is focused on "negative delta" (negative change)---either actual or anticipated. The loss orientation is magnified because the depressive has a low threshold for defining loss, he is driven by *scarcity assumptions,* he views loss as *depleting*, he has a high *stop-loss criterion,* and he has a short-term focus. Examples of the loss orientation are depicted in Table 2.

Insert Table 2 about here

Let us examine each of the loss issues. Examples of the low threshold for defining loss include patients who view small rejections and minor inconveniences as significant personal failures of major proportions. Because the depressive views any loss as polarized to the negative extreme, he attempts to avoid further losses by "stopping-out" (quitting) early. An example of the search for loss and a low threshold for defining loss is a woman who assumed that she would be rejected by men and who was hypervigilant for any signs of rejection. Immediately on seeing any sign of disinterest in the man, she would excuse herself and walk away. The therapist encouraged her not to "stop-out" early and to stay in the situation longer. This dramatically improved her social interactions. Seligman's descriptions of *helplessness* are consistent with the low threshold for defining failure and the stop-loss orientation.

Depressives are often driven by scarcity and depletion assumptions. Because they view the world as an unlikely source of future rewards and because losses are considered depleting, the depressive attempts to avoid any failure by waiting until he is absolutely certain of success.

For example, a salesman avoided making calls because he believed that there were few opportunities for success and that the economy was in the middle of a depression (which it was not). He viewed rejections as personally depleting and evidence of his incompetence. The longer he waited to make sales, the more evidence he thought he had that sales were impossible to make. He believed that he could only make sales when he was sure of a positive outcome and when he felt motivated and comfortable. His therapist assisted him in recognizing that his self-fulfilling scarcity and failure assumptions, coupled with his "energy depletion" idea, confirmed his negative view. The alternative view---" The world is a natural reinforcer for positive behavior"--- and "You don't need energy to act"--helped him overcome an inertia that had plagued him for several years.

Losses are viewed as the beginning of a linear trend of increasingly accelerating losses. I refer to these as "cost-cascades", a concept borrowed from Becker's microeconomic model. The depressive often fears that he will step on a trap-door of loss, dropping him into a never-ending chasm of failure. Because he fears these cost-cascades, he will stop out quickly. Linked to this cost-cascade theory is the depressive view that negative consequences are irreversible---they are not compensated by future (or past) gains. Furthermore, actions are viewed as irrevocable---that is, he fears that, once committed, he will be unable to pull out. This catalyzes him to stop-out soon--"while he has the chance". For example, a single man feared getting involved with a woman he liked because he believed that, once involved, he would be trapped and he would be unable to be assertive and pull out if the relationship did not work out. He believed that he would be better off not dating her further lest he enter into an irreversible, irrevocable relationship. Examining his rights to be assertive--and the value to the woman if he was assertive--- was helpful in assisting him in pursuing the woman. Revoking decisions helped him make decisions.

Depressive loss orientation is not only focused on long-term losses or hopelessness, but it is also overly focused on short-term *costs or investments.* Prudent and proactive individuals will view investments as *purposive*--that is, "I exercise *in order to* get into shape". For the optimist, the costs are *up front*---.that is, he views costs as a means to an end, while the pessimist views costs as an end in themselves. Effort and risk serve the purpose of producing positive outcomes. In contrast to the purposive optimist, the depressive views losses as the entire field of experience. His temporal focus is short-term on the depletion of loss: "It's too much effort" and "I feel uncomfortable and tired" are examples of this short-term focus. The therapist may assist the patient in transcending the short time-frame by imagining how he will feel after he has exercised (or engaged in productive behavior). Losses may be reconstrued as costs with a purpose.

Finally, the depressive responds to loss with regret and self-recrimination. Ironically, he believes that he *should* have been able to avoid past mistakes but that he will be *unable* to control future mistakes. Regret and self-criticism are added costs to loss and failure, further motivating the depressive to avoid any loss by stopping out early. In short, depressives assume loss as a default function and search for reasons not to act in order to avoid further costs.

Gain orientation

Similar to the negative orientation toward loss, the depressive takes an ambivalent attitude toward gains. Since his negative schemata predict that "reality" is basically negative, gains are viewed with skepticism. This ambivalence toward gains is reflected in the fact that the depressive has a high threshold for defining gains, gains are undervalued and viewed as having

low probability, there is a demand for immediate gains, small reductions in frustration are preferred to longer term investments ("contingency traps"), gains are viewed as out of the control of the depressive and gains are viewed as self-correcting toward the negative norm ("gains have gravity"). These issue are illustrated in Table 3.

Insert Table 3 about here

Let us keep in mind that the depressive strategy is viewed as an attempt to guard against further losses. If the depressive finds himself becoming "overly optimistic", he runs the risk, he believes, of added exposure. I shall describe, later, how the depressive "manages expectations" to handle his loss and gain orientation, but here we shall examine the ambivalence toward gain so characteristic of resistant depressives. Some of this resistance appears to be primarily a consequence of negative schemata, while other aspects of the resistance are cognitive strategies to avoid greater exposure.

Because the schema is negative, there is selective focus on the negative and either lack of processing of or discounting of the positives. Depressives have a high threshold for defining positives---often a positive must be close to perfection to be counted as a positive, whereas the negative category is overly inclusive. This underinclusion of positives results in the difficulty in recognizing gains from reinforcement, since they are not viewed as "reinforcing" in the first place. Further, because of the anhedonia of depression, positives have low pleasure or mastery value---that is, they have *low positive utility*. This further undermines the reinforcing value of positives. Similarly, positives are expected to be improbable, further enhancing the low *expectancy* of further reinforcements. A string of positives is not generalized to a *trend of future positives*, since positives are not noticed, discounted, undervalued, compartmentalized or are viewed as non-predictive. Given the discounting of gains, reinforcements provide little incentive.

Depressives, however, do experience positives, but often positives are defined as the reduction of a negative----namely, the reduction of frustration or anxiety. This *negative reactive* orientation is a result of the demand for immediate gratification. Like the starving man, the depressive seeks relief from his discomfort as quickly as possible--- he acts as if he cannot afford delay of gratification. The *myopia* that is so common with drug and alcohol addiction (which are often comorbid with anxious depression), is the result of the short-sighted demand for discomfort reduction without consideration of long-term costs. Short-term gains are traded against longer-term costs---often because the depressive believes that he *needs* the gain desperately. This results in *contingency traps*---that is, the repetition of an ultimately self-defeating behavior simply because it produces short-term reinforcement. Examples of contingency traps are substance abuse, avoidance, and escape, without consideration of the advantage of alternatives that might ultimately enhance the depressive's condition. The depressive, trapped in a contingency, follows a rigid rule--"When frustrated, do X", where "X" refers to substance abuse, escape, and avoidance. The depressive becomes trapped in the contingent payoff, without considering or testing altenatives.

Risk Management

Individuals who believe that they have few resources and few opportunities of future earnings are wise to take a low-risk approach to their investments. Prudent investors, often with

substantial capital reserves, are able to protect against risk by taking the long-duration approach to investment and diversifying across a variety of investments. In contrast, the depressive, driven by his sense of deprivation and desperation, takes a short-term view, seeking to reduce frustration immediately. Moreover, he perceives himself as having few resources to provide himself with diversification, further adding to his exposure for his single investment ("If I lose this, I lose everything"). Unlike the optimist who believes that he has many hands to play, the depressive views himself as having few "replications". Thus, this "hand" must be a winner.

Risk can be managed by demanding more information before investments are made---that is, the depressive can require that he wait it out before he is absolutely certain that he will show a gain. Waiting, as we have noted above, has opportunity costs, but these costs are discounted in depression because any alternative is viewed as having a low payoff anyway. He does not view himself as sacrificing attractive opportunities and he offsets this by focusing on how he can minimize devastating losses by waiting.

Another strategy for the depressive in risk management is to reject hope whenever hope arises. This is because the pleasure that one might derive from hope is often offset by the anxiety it arouses about further exposure---especially in a market that is viewed as volatile, negative, and uncontrollable. Hope carries risk of rising expectations that will lead to disappointment. For many depressives it is disappointment, loss or "negative delta" that is feared more than the absence of rewards. Losing something is far more aversive than never having it in the first place.

Because hope is viewed as carrying the risk of unrealistically positive expectations, the depressive often argues that there are good reasons not to hope. For example, a research assistant for a company became angry with the therapist when the therapist argued that she (the patient) might have the ability to take on more challenging work. Although the patient had been criticizing herself for her lack of progress in the company, the idea of raising her expectations precipitated considerable anxiety: "What if I get my confidence up and then fail? Everyone will notice. I'll be far more visible." In her case, hopelessness was a strategy to avoid further risk---that is, more public exposure.

The rejection of hope underlies depressive attempts to aggressively lower expectations in self and other. By lowering expectations of his performance, the depressive guards against disappointment. An alternative is to raise standards so excessively that almost no one would achieve the standard, thereby providing a "face-saving" attribution strategy: "Well, no one would achieve A+, so it means little about me. *And at least I have the highest standards."*

Common strategies for reducing risk involve straddling and hedging. For example, the depressive, fearing that his efforts will not work out, may bet against himself by minimizing his effort (minimizing his investment) and pulling out at the first sign of failure (straddling). This appears to be what happens in the case of helplessness---attempts at success, followed by a single failure, lead to early stopping-out (quitting). The depressive who straddles, will sit on the fence, put in minimal effort and then give up. His rationale is that this protects against further loss. For example, a husband in marital therapy, pessimistic about his marriage, put minimal effort into homework, demanding complete compliance from his wife. When he received less than perfect positive feedback from his wife, he discontinued his efforts at improving the relationship.

Hedging involves covering a potential loss in one investment with a possible insurance policy with another investment. Infidelity is an example of hedging in that the individual

protects against the loss of one partner by having another readily available. For example, a woman who feared rejection by men, began pursuing an extramarital affair as soon as she got married. This was coupled with her hypervigilance that no man could be trusted. Ironically, her hypervigilance focused on her concern that her husband would find other women more appealing while she herself was pursuing other men. Her rationale was that she could protect herself against abandonment by proving to herself that she was still attractive to other men.

Another self-handicapping strategy that protects against deflation in self-esteem is to manufacture excuses or reasons why productive behavior cannot be pursued. For example, the salesman referred to earlier, would get up late during the day, focus his attention on trivial office details in his apartment, and carry out errands. He would complain about aches and pains that would become excuses for not making sales calls. He would tell the therapist that he was not yet *ready* to pursue sales calls, each week inventing new reasons why the calls could not be made. In fact, examining his fear of rejection revealed that he had very few rejections because he was making few calls. Indeed, the problem was not so much that he was failing when he made calls (which was his greatest fear), but rather that he almost never made calls. In fact, his goal was to avoid making calls at all costs. Thus, he would generate as many reasons as possible *not* to make calls. Some depressives use "not trying" as an options play: "If I don't try now, I keep open the option of trying in the future." Self-handicapping is like a smoke-screen that prevents self and others from evaluating true ability. It protects against the risk of failure because it prevents any direct evaluation of capability. These risk management strategies are identified in Table 4.

Insert Table 4 about here

Accounting Principles in Depression

An assumption in cognitive therapy is that the individual will examine the evidence and weigh the evidence or advantages of specific thoughts. Thaler (1985) has suggested that individuals may enter evidence into two unrelated accounts---as if their accounting principle leads them to consider these two accounts as part of separate systems. Typically most individuals will have a superordinate "account" of positives and negatives, such that negatives are offset by positives. Consider how you calculate your net income---you subtract your expenses from your income, yielding your final net income.

Depressed individuals appear to keep separate unrelated accounts---a loss account and a gain account. The loss account is not offset by the gain account, because the depressive does not consider them to be similar and because his schema directs him toward losses. For example, non-depressed people have a "self-esteem account" which includes all the positives and negatives related to their performance or qualities. One might argue that non-depressed individuals 'fudge" their "returns" by exaggerating their gains and minimizing their losses (Taylor, 1990). Depressed individuals appear to have a low self-esteem account (which accumulates losses with interest) and another account, which I would label "irrelevant behavior" (which includes positive behavior which is not considered relevant to an account of self-esteem). Furthermore, depressed individuals act as if they are "closing out" their positive accounts, such that positives are not carried forward into the future.

Conclusion

In this article I have proposed that depressive resistance is an attempt to avoid further

loss. Given the negative schemata of the depressed patient, selective information processing has served to reconfirm the negative schema. Because these negative schemata are formed at a preoperational level of intelligence, metacognitive self-reflection is often absent. This limits the ability of the patient to gain distance or perspective from his negativity.

Information search is directed toward a default question---"How can I lose?"---which, when answered affirmatively, terminates further inquiry. Optimism is rejected since the depressive views his goal as prevention of loss rather than obtaining gain. Depressives have high stop-loss criteria for negatives and high criteria for defining gains.

The microeconomic utility model advanced here is applicable to other areas or psychopathology---for example, anxiety, anger, paranoia and marital conflict. This model assists both therapist and patient in understanding resistance in a non-pejorative manner that has direct implications for interventions. The intervention strategies depend on, first, understanding the patient's portfolio theory and, second, proposing a different portfolio theory based on an optimistic view of current and future resources, duration and replication of investment, expanding the criteria for gains, modifying the overinclusion of losses and identifying stop-loss, hedging, straddling and other self-defeating strategies. The proposed model helps us extend other cognitive models, such as Beck's, Seligman's, and Abramson's, to the area of resistance and decision-making.

References

Abramson, L.Y., Seligman, M.E.P., & Teasdale, J. (1978) Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87,* 49-74.

Baron, J. (1994) *Thinking and deciding.* New York: Cambridge University Press.

Beck, A.T. (1976) *Cognitive therapy and the emotional disorders.* New York: International Universities Press.
Beck, A.T., Rush, A.J., Shaw, B.F., & Emery, G. (1979) *Cognitive Therapy of Depression. New* York: Guilford.
Becker, G. S. (1976) *The Economic Approach to Human Behavior.* Chicago: University of Chicago Press.
Bodie, Z., Kane, A., & Marcus, A.J. *(1996). Investments.* Chicago: Irwin Publishing
Bowlby, J. (1968) *Attachment and Loss: I. Attachment.* London: Hogarth.
Bowlby, J. (1980) *Attachment and Loss. III Loss: Sadness and Depression*. London: Hogarth.
Carver, C.S. & Scheier, M.F. (1981) *Attention and Self-regulation: A control theory approach to human behavior.* New York: Springer-Verlag.
Freud, S. (1917) . Mourning and melancholia. In *Complete Psychological Works. Vol.14. (Standard edition.)*. Translated and edited by J. Strachey. London: Hogarth Press.
Gardner, R.R. (1982).....*Archives of General Psychiatry, 39,* 1436-1441.
Guidano, V.F. & Liotti, G. (1983) *Cognitive processes and the emotional disorders.* New York: Guilford.
Janis, I.L. & Mann, L. (1977) *Decision making: A psychological analysis of conflict, choice and commitment.* New York: Free Press.
Leahy, R.L. (1985) The costs of development: Clinical Implications. In R.L. Leahy (ed.), *The Development of the Self.* New York: Academic Press.
Leahy, R.L. (1991) Scripts in cognitive therapy: The systemic perspective. *Journal of Cognitive Psychotherapy, 5,* 291-304.
Leahy, R.L. (1992) Cognitive therapy on Wall Street: Schemas and scripts of invulnerability. *Journal of Cognitive Psychotherapy, 6,* 1-14.
Leahy, R.L. (1995) Cognitive development and cognitive therapy. *Journal of Cognitive Psychotherapy.*
Leahy, R.L. (1996) *Cognitive Therapy: Basic Principles and Applications.* New York: Jason Aronson Publishing Company.
Leahy, R.L. (In press) Resistance and Self-Limitation. In R.L. Leahy (Ed.), *Case Studies in Cognitive Therapy.* New York: Jason Aronson Publishing.
Leahy, R.L. & Beck, A.T. (1988) Cognitive therapy of depression and mania. In R. Cancro and R. Georgotas (Eds)., *Depression and Mania.* New York: Elsevier.
Lewinsohn, P. M. & Gotlib, I. (1995) Behavioral theory and treatment of depression. In E.E. Beckham & W.R. Leber, eds. *Handbook of Depression. (*Pp. 352-375) New York: Guilford.
Lorenz, K. (1966) *On aggression.* New York: Harcourt, Brace, Jovanovich.
Marks, I.M. (1987) *Fears, phobias, and rituals: Panic, anxiety and their disorders.* Oxford: Oxford University Press.
Nolen-Hoecksema, S. (1987). Sex differences in unipolar depression: Evidence and theory. *Psychological Bulletin, 101,* 259-282.
Price, J. S. & Sloman, L. (1987)..... *Ethology and Sociobiology, 8,* 85-98.
Rehm, L.P. (1990). *Cognitive and behavioral theories.* In B.B. Wolman & G. Stricker (Eds.), *Depressive disorders: Facts, Theories and Treatment Methods (pp. 64-91)*. New York: Wiley.

Schwarts, B. (1978) *Psychology of Learning and Behavior.* New York: Norton.
Seligman, M.E.P. (1975) *Helplessness: On Depression, Development and Death.* San Francisco: Freeman & Co.
Selman, R.L. (1980) *The Growth of Interpersonal Understanding.* New York: Academic Press.
Taylor, S. (1989) *Positive Illusions: Creative Self-deception and the Healthy Mind.* New York: Basic Books.
Thaler, R. (1985) Mental accounting and consumer choice. *Marketing Science, 4,* 199-214.
Tomassi, M. & Ierulli, K. (Eds.) (1995) *The New Economics of Human Behavior.* Cambridge, UK: Cambridge University Press.
Wenegrat, B. (1990) *Sociobiological Psychiatry: A New Conceptual Framework.* Lexington, MA: Lexington Books.
Wilson, E.O. *Sociobiology: A New Synthesis.* Cambridge, MA: Belknap Press.
Wilson, J. Q. (1993) *The Moral Sense.* New York: The Free Press.

Table 1.
Portfolio Theories of Depressed and Non-depressed Individuals

Portfolio Concern	**Depressed**	**Non-depressed**
Assets available	Few	Some/Many
Future earning potential	Low	Moderate/high
Market variation	Volatile	Low/predictable
Investment goal	Minimize risk	Maximize gain
Risk-orientation	Risk averse	Risk neutral/risk lover
Functional utility of gain	Low	Moderate/high
Replications of investment	None/few	Many
Duration of investment	Short-term	Long-term
Portfolio diversification	Low	High

Table 2.
Loss Orientation in Depression

Loss Orientation	**Example**
Low threshold	The slightest decrease is viewed as a loss of significant proportion.
High "stop-loss" criteria	A small loss leads to termination of behavior. Consequently, the depressive gets stopped out early.
Scarcity assumptions	The world is viewed as having few opportunities for success. This is generalized to a zero-sum model of rewards for self and other.
Depletion assumptions	Losses are not simple inconveniences or temporary setbacks. They are viewed as permanently drawing down resources.
Cost-cascades	Losses are viewed as linked to an accelerating linear trend of further losses.
Temporal focus	The depressive takes a short-term focus, viewing his investments only in terms of how they will pay off or lose in the short-term.
Reversibility and revocability	Losses are viewed as irreversible and not compensated or off-set by gains. Negative investments are irrevocable---he cannot see himself as able to "pull out" easily.

Regret orientation	Losses are followed by regret that one should have known better. His hindsight bias is focused on the assumption that he should have been able to make perfect decisions with limited information.

Table 3.
Gain Orientation in Depression

Gain Orientation	**Example**
High threshold for definition	A major change is required to be considered a gain.
Low valuation	Gains are viewed as having little hedonic or personal value. They are often discounted.
Low probability	Future gains are viewed as unlikely and unpredictable.
Immediate demand	There is little ability to delay gratification. The depressive is *myopic*, getting caught in the immediate consequences of an action.
Contingency traps	Focusing on short-term frustration, the depressive

	will continue to avoid or engage in pointless behavior simply because it provides short-term reduction of anxiety.
Lack of control	Gains are viewed as non-contingent---out of the control of the depressive. Although he believes that he can produce losses, he does not believe that he has control over producing gains.
Gravity of gains	Since the norm is negative, gains are viewed as self-correcting toward the negative----that is, they have gravity.

Table 4.
Risk Management Strategies in Depression

Risk Management Concerns	**Example**
Diversification	Low diversification: He believes that he has only a single investment---the one at hand---and, therefore, he is highly exposed to loss.
Duration	Short-term: Because he believes that he is in the game for the short-term, he is highly exposed to volatility.
Replication	Low or none: He believes that he will not have additional chances to succeed in this situation. Therefore, he must be sure that his first attempt will work.
Waiting	He believes that he needs to wait for a more opportune moment to act and he forgoes opportunity costs because no alternative seems attractive.
Information demands	High: He requires close to certainty before he decides.
Disappointment aversion	High: He is less concerned with the ongoing lack of reinforcement than he is with the possibility of a negative *change*. He avoids

	negative delta at all costs.
Manipulation of expectations	He attempts to either lower expectations that he will succeed or raise expectations excessively in order to avoid disappointment and to avoid direct assessment of his "true" ability.
Rejection of hope	High: He views hope ambivalently, believing that getting his hopes up leaves him open to greater exposure and disappointment.
Straddling	He exerts a minimal effort as a probe to determine if his behavior can have some effect. Holding himself back, he pulls out at the first sign of a negative.
Hedging	He bets against himself by keeping other options open that, ironically, may undermine his current choice.
Hiding	He attempts to maintain a low profile in order to avoid being exposed to evaluation.
Obscuring self-evaluation	He creates conditions that prevent a direct assessment of his competence under optimal conditions. This provides him with the face-saving option of disattributing his failure to lack of effort, illness, poor attendance, and lack of preparation---rather than to a fixed trait.