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A rational choice theory of midlife crises

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Abstract

This paper models the midlife crisis as a decision on whether and when to realize a life dream, incorporating the key components of three psychology theories of midlife crises. It explains why a crisis (dream realization) tends to occur in the midlife if it occurs at all. Other results include that one either realizes his dream fully or not at all, that a shorter life expectancy makes a midlife crisis more likely, and that "crazier" dreams tend to be postponed to a later time in life.

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1. Introduction

To his family's dismay, a successful 42-year old banker willingly accepts a salary cut of more than 50% in order to join the staff of a local newspaper as an editorial writer. He is very happy about his career change because what he lost in pay he gained in personal fulfillment. A 46-year old store manager leaves his wife and young son to pursue his childhood dream of living in the wilderness. He camps from one place to another, and begs from time to time. After a few years of roaming around, he eventually regrets the decision to give up his normal life, but there is no way of going back.

Since the work of Elliott Jaques (1965), stories like these are referred to as examples of the "midlife crisis", characterized in the psychology literature as the often difficult transition many face in their 40s. Studies on the causes of the midlife crisis from a psychological perspective have been insightful but inconclusive, highlighting the fact that the causes of this phenomenon are complicated and multi-faceted in nature. For example, Jaques (1965) himself emphasized prospective death in understanding the midlife crisis. "I believe, and shall try to demonstrate, that it is this fact of the entry upon the psychological scene of the reality and inevitability of one's own eventual personal death that is the central and crucial feature of the mid-life phase…" (p506). Brim (1976) called for attention to the role of declining hormone levels and physical capabilities in studying middle-age behavior. Levinson et al. (1978) used youthful aspirations or "dreams", which tend to be suppressed in early adulthood in order to develop a certain life structure but never die as one ages, to explain a man's development and crisis during middle-age years. As they put it, "Those who betray the Dream in their twenties will have to deal later with the consequences." (p92) [1]

While these competing theories of the midlife crisis are very different, they are similar in one aspect: they all view changes in midlife as primarily internally motivated, rather than being triggered by external life events. On the other hand, difficult external life events during the middle-age years, including divorce, involuntary unemployment, the death of a child, the serious illness of a family member, or severe financial problems, have also been mentioned as possible "triggers" for the midlife crisis.

However, there has been no formal study on the midlife crisis from a rational choice perspective, despite the extensive research in the psychology literature and the popular attention. The present paper aims to fill this void by constructing a rational choice model about whether and when a midlife crisis is likely to take place. Our main premise is that individuals choose to have, or not to have, a midlife crisis, depending on whether they are better off by plunging themselves into a new job or lifestyle. Although midlife crises are almost always associated with material losses, they can still be explained by welfare maximization if we allow for a richer set of values than purely material ones, as pointed out by Becker (1993).[2]

[1] It is interesting to see how common it is for middle-age people to wonder what their lives would have been like had they gone after their dreams. In a recent TV show on TLC, The Secret Life of a Soccer Mom, a group of stay-at-home moms are given the opportunity to pursue the dream career they gave up to stay with their children. So they see what their dream career would have been like for a week, and then at the end they get the chance to choose if they want a job in that field or if they want to continue staying at home with their children.

[2] A question may arise here as to how a midlife incident can be labeled as "crisis" if individuals simply change their career or lifestyle to maximize welfare. As we shall explain later, the costs of a midlife crisis (dream realization) are often material ones with universal values but the benefits tend to be psychological, emotional, or spiritual in nature and their values tend to be individual-specific. Therefore, from an outsider's point of view, the person who is pursuing such a dream is doing something "crazy" or extreme.

We base our rational choice approach on the three "internal" psychology theories as emphasized by Jaques (coming death), Brim (declining physical capabilities), and Levinson et al. (the youth dream). The basic elements of our model can be summarized as follows. Suppose the individual has a dream (about career, love, hobby or spiritual calling), the realization of which entails benefits as well as costs. Having a midlife crisis is equivalent to acting on the dream. Acting on a dream generates a crisis-like situation because the costs of pursuing the dream are often material or otherwise universally valued (like leaving a high-paying job or one's family) whereas the benefits from dream realization tend to be spiritual, emotional, or psychological in nature and are individual-specific, therefore often intangible to others (like the enjoyment from answering to a particular spiritual calling or pursuing a particular hobby). [3] Due to declining physical abilities, the benefits from dream realization decrease as one ages, which encourages an individual to realize his dream as early as possible. However, acting on the dream disrupts a "normal" life, and the costs of dream realization are higher when one has a longer remaining lifespan, which tends to postpone realizing the dream. Balancing these two effects, the dream tends to be realized in midlife, if it is to be realized at all. Whether to act on the dream depends on whether the maximized utility from dream realization with optimal timing exceeds the default utility when the dream is never acted upon.

Results derived from this model include that midlife crises, if they take place, tend to be extreme and dramatic, that shorter life expectancies make the midlife crisis more likely, and that midlife crises occurring later in life tend to be "crazier".

2. A Simple Model

Suppose that an individual, having gone through his childhood, adolescence, and the "novice phase" of early adulthood, is at the beginning of his adulthood.[4] By this time, physical ability is at its peak, the necessary investment in human capital made, career and family established, and a set of preferences formed as the result of complex interactions among genetics, upbringing, education, personal experience and social-economic environment. For many an element in their preference set is a dream regarded as an important part of a complete and fulfilling life.[5] Whether and when to realize that dream are critical questions facing the individual from this time on.

For simplicity we express everything in utility terms. Let the total utility from realizing the dream in year t be written as

$$U(t) = f(t)B - (T-t)c = B\left[f(t) - (T-t)\alpha\right], \tag{1}$$

where B is the one-time utility benefit (the thrill and the experience associated with the dream realization), c is the permanent reduction in the flow of utility representing the costs of living with the aftermath of realizing the dream (lost income, injuries, etc), T is the length of life and

[3] There is another type of dream – the "expensive toy" type – that also develops early in one's life but tends to be fulfilled in the midlife. Examples include middle-age men and women starting to buy expensive "toys" such as motorcycles and sports cars. We exclude the "expensive toy" dreams from our analysis because acting on those dreams usually does not cause any crisis of the type studied in the psychology literature. Indeed, the only "costs" of acting on an "expensive toy" dream is the price one needs to pay for the toy in question. This special purchase behavior can be easily explained with an age-earnings profile that peaks around middle-age and a borrowing constraint.

[4] According to Levinson et al. (1978), the novice phase is roughly from 17 to early thirties.

[5] The nature of the dream is unique to the individual. It could involve career expectations, love, a hobby or a spiritual calling. According to Levinson et al. (1978), men's dreams are usually formed in their late teens and early 20s, though they have origins in childhood and adolescence.

finally $f(t)$, where $f(t) > 0, f'(t) < 0, f''(t) < 0$, is the effect of aging on the benefit from dream realization. In addition, $\alpha = c/B$ is a measure of the cost-benefit ratio of the dream. In one sense the greater is α, the more extreme or "crazier" the dream. Further, we have simplified the analysis by assuming that the only utility discounting is the result of the possibility that one's ability to enjoy the dream might diminish with aging.

Increasingly declining physical capabilities, as represented by a strictly decreasing and concave $f(t)$, play a critical role in our formal analysis. This assumption is consistent with age-varying utility functions that have been previously used in economic analyses. For example, Borsch-Supan and Stahl (1991) used the notion that the utility function may be affected by health deterioration due to aging to study the life-cycle saving pattern; Trostel and Taylor (2001) used deteriorating ability to enjoy consumption as the central concept in constructing their theory of time preference.[6]

Based on the objective specified in (1), the first order condition with respect to the timing of dream realization is

$$f'(t) + \alpha = 0. \tag{2}$$

Denote the solution to (2) as *t**. Then the maximal utility from dream realization is[7]

$$B\left[f(t^*) - (T - t^*)\alpha\right]. \tag{3}$$

If a dream is ever to be realized, its optimal timing is determined by (2). The fact that a dream with detrimental costs tends to be realized in one's midlife is due to two opposing effects of waiting. On the one hand, the cost of realizing the dream, $\alpha B(T-t)$, is sizable during early adulthood because of the long horizon ahead, and waiting to realize the dream helps to reduce that cost. On the other hand, the benefit from realizing the dream, $Bf(t)$, diminishes as one gets older because of declining abilities, and therefore waiting reduces the benefit.

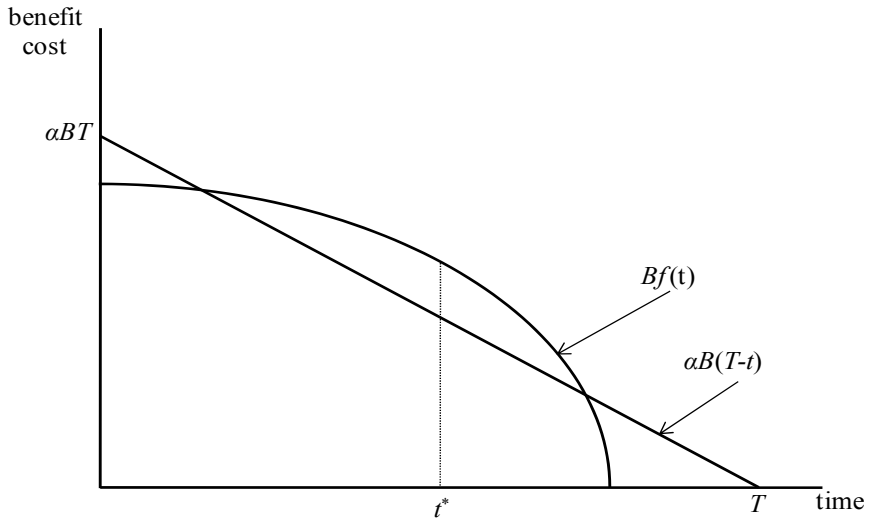
However, whether or not to realize a dream depends on whether the maximized utility with dream realization, which is expressed in (3), is positive, because the default utility level is zero with neither the benefit nor the cost associated with dream realization.

Figure 1 below illustrates whether and when a dream may be realized. Because the benefit curve, $Bf(t)$, is concave and the cost curve, $\alpha B(T-t)$, is a straight line, the net benefit is maximized at t^* where the slope of the benefit curve equals that of the cost curve, or $Bf'(t) = -\alpha B$. However, even at this optimal timing, the dream may still not be worth realizing if the maximized net benefit is negative. This would be the case if the benefit curve lies below the cost curve everywhere. Otherwise, as in the situation depicted in the figure, the dream is worth realizing, and the maximal positive net benefit is realized at t^*.

[6] Trostel and Taylor (2001) surveyed some of the empirical evidence on increasingly declining capabilities. It seems the evidence is fairly conclusive that $f''(t) < 0$. However, $f'(t)$ may be positive at the beginning of adulthood before it eventually turns negative. What matters for our work, however, is that $f'(t) < 0$ around midlife. Note that the shape of $f(t)$ mimics that of a life table, except that the latter turns convex towards the end of life.

[7] The existence of a solution to (2) is guaranteed under some trivial conditions on $f(\cdot)$. Note also that the second order condition is obviously satisfied. Therefore, utility (1) is maximized at *t**.

Figure 1



3. Main Results

Several factors in the model may affect whether and/or when a midlife crisis may happen. First, suppose that the dream can be partially realized, with the realized benefit being *pB*, where $0 \le p \le 1$ is the portion of the dream that is realized, and assume that the cost incurred maintains the same ratio α to the benefit realized. It can be readily seen that the first order condition regarding the optimal timing of (partial) dream realization is still (2). Thus, *t** is independent of *p*. The net benefit from partial dream realization is

$$pB\left[f\left(t^*\right) - \left(T - t^*\right)\alpha \right]. \tag{4}$$

Therefore, p does not affect whether and when to have a (partial) midlife crisis, but if there is a net benefit from a midlife crisis, the larger the *p* the better. In other words, one does not ever want to have a partially realized dream.

Proposition 1. *An individual either fully realizes his dream or achieves none of it.*

Proposition 1 explains why even though not all people have a midlife crisis, those who have one tend to have a quite dramatic experience. A half-realized dream or a "mild" midlife crisis is not the equilibrium state.

Second, suppose an increase in longevity *T* does not affect the profile of $f(t)$. Then it also does not affect the optimal timing of dream realization *t**, based on the first order condition (2). This increase in longevity would be reflected in Figure 1 by a parallel shift upward in cost curve, $\alpha B(T-t)$. The larger the increase in *T*, the more likely the benefit curve will lie everywhere below the cost curve and therefore the less likely the expression in (3) will be positive. As a result, a rational individual will not take action on the dream.

Proposition 2. *Individuals with shorter life expectancies are more likely to act on their dreams.*

This proposition can be used to explain why some terminally ill individuals tend to depart from their normal course of life and engage in some extreme activities, such as climbing a high mountain or putting one's normal life on hold to travel the world. Bad news about one's longevity, such as an unexpected heart attack, may trigger a midlife crisis that otherwise would not take place. By the same token, this proposition also predicts that people living in violent

regions or having dangerous jobs and thus having shorter life expectancies would have a higher incidence of midlife crises.[8]

Third, consider the effects of α on when the dream is realized. It is easy to see from (2) that $dt^*/d\alpha > 0$. Referring to Figure 1, an increase in α pivots the cost curve, $\alpha B(T-t)$, up and to the right around point T increasing the optimal t. Therefore, an increase in α tends to delay a midlife crisis if there is one. Because $\alpha = c/B$ can be regarded as a measure of the "craziness" of a dream, we have the following proposition.

Proposition 3. *Midlife crises that happen later in life are "crazier".*

When people see an old rich male marry a young female model who could easily be his granddaughter by age, they tend to conclude that some individuals simply become more unreasonable or "crazier" as they get old. According to Proposition 3, these individuals have those crazy dreams all along, and it is exactly because their dreams are so crazy that they have to wait until a later time in life to realize them.

4. Conclusion

This paper looks at the midlife crisis from a rational choice perspective and models it as a decision on whether and when to act on a dream that has benefits and costs. The model explains why a crisis (dream realization) tends to occur in one's midlife if it occurs at all, and why the midlife crisis, if there is one, is likely to be extreme or dramatic. The effects on the likelihood or timing of dream realization from factors such as longevity and the "craziness" of a dream have also been investigated, resulting in predictions that a shorter life expectancy makes the midlife crisis more likely, and that midlife crises happening later in life tend to be "crazier".

We have taken it as given in this paper that a dream to be realized is costly because of its disruptive effects on one's career, family or health. However, people set out in life as adults with a series of dreams they wish to achieve, and many of the dreams are non-detrimental in nature. Indeed, as documented in Levinson et al. (1978), dreams in life motivate people, and generate a sense of aliveness and purpose. Achievements of many life dreams do not cause crisis-like situations or, as modeled in the present paper, a future stream of costs. Then an interesting question arises: why do some individuals have crisis-prone dreams but others do not? While this is a question better left for psychologists to investigate, we can make a tentative general suggestion here. A dream becomes crisis-prone not necessarily because the nature of the dream itself makes it so, but because the dream is on a collision path with the life course the individual has embarked on.[9] To avoid misalignment between one's dreams and life course, thus reducing the likelihood of a midlife crisis, it may be helpful to explore one's dreams earlier in life. As a

[8] Such "horizon effects" caused by shortened or extended life expectancy are also observed in other situations. For example, Dow et al. (1999) found that the United Nations' Expanded Programme on Immunization (EPI) positively affects birthweight (an indicator of the mother's investment in the baby), and hence reduces mortality risks associated with low birthweight. Ganz (2000) found that the higher the chances an individual may die from neighborhood violence, the more likely he or she will become a smoker with a higher risk of having lung cancer or other diseases associated with smoking. For theoretical analyses of how an exogenous or "background" mortality risk affects individuals risk-taking behavior elsewhere, see Eeckhoudt and Hammitt (2001) and Liu and Rettenmaier (2007).

[9] Levinson et al. (1978) suggested that a man with a dream "may be pushed … by his parents, by various external constraints, such as lack of money or opportunity…", and "He may thus succeed in an occupation that holds no interest for him."(p92) They also pointed out that those who build a life around their dreams in early adulthood have a better chance for personal fulfillment.

result, an individual is more likely to find his true passions early on and pursue his life dreams without incurring detrimental costs or causing crises.[10]

The basic mechanism in this paper can be directly used to explain a separate phenomenon that politicians tend to become more corrupt or take more risks towards the end of their tenure.[11] To a government official with power to benefit financially or otherwise from his position, the power ends at the time he steps down. If he can only exert his power once to benefit himself, he will wait to the last moment because waiting, while not reducing the ability to benefit from his position as long as he remains in office, would reduce the cost of such an illegal or unpopular activity due to a shorter remaining life. This is probably why unpopular pardons tend to be given in the last days of office of a president or a governor.

[10] In addition, dream explorations at a young age may help uncover the true costs of pursuing a particular dream, reducing the possibility of a "misinformed" midlife crisis later in life.

[11] In China, this pattern of corruption timing has been so evident that it is referred to as "the age-59 phenomenon". The official, and often mandatory, retirement age for most civil officials is 60.

References

Becker, Gary S. (1993) "Nobel Lecture: The Economic Way of Looking at Behavior" *Journal of Political Economy* **101**, 385-409.

Borsch-Supan, Axel H. and Konrad Stahl (1991) "Life Cycle Savings and Consumption Constraints" *Population Economics* **4**, 233-255.

Brim, Orville G., Jr. (1976) "Theories of the Male Mid-Life Crisis" *The Counseling Psychologist* **6**, 2-29.

Dow, William H., Tomas Philipson and Xavier Salai-Martin (1999) "Longevity Complementarities under Competing Risks" *American Economic Review* **89**, 1358-1371.

Eeckhoudt, Louis R. and James K. Hammitt (2001) "Background Risks and the Value of a Statistical Life" *Journal of Risk and Uncertainty* **23**: 261-279.

Ganz, Michael Lee (2000) "The Relationship Between External Threats and Smoking in Central Harlem" *American Journal of Public Health* **90**, 367-371.

Jaques, Elliott (1965) "Death and the Midlife Crisis" *International Journal of Psychoanalysis* **46**, 502-514.

Levinson, Daniel J., Charlotte N. Darrow, Edward B. Klein, Maria H. Levinson and Braxton McKee (1978) *The Seasons of a Man's Life*, Ballantine Books: New York.

Liu, Liqun and Andrew J. Rettenmaier (2007) "Effects of Mortality Risk on Risk-Taking Behavior" *Economics Letters* **94**, 49-55.

Trostel, Philip A. and Grant A. Taylor (2001) "A Theory of Time Preference" *Economic Inquiry* **39**, 379-395.