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A MODEL OF HUMAN NATURE
AND PERSONAL DEVELOPMENT

by

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A Model of Human Nature and Personal Development

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Abstract:

This paper assumes that human nature is universal and postulates the existence of a common, true utility function defined on attributes or "substantive goods." However, individuals have different household production functions so that the capacity to realize the substantive goods varies from person to person. Moreover, the limited life experience of an individual constrains his perception of his constraints and opportunities. As a result, individual maximization behaviour is based on a perceived utility function and a perceived household production function. Personal development is a process of learning about the true utility function and the true household production function. If a virtuous cycle of personal development is activated, imaginary constraints are overcome and real constraints are accepted. On the other hand, a vicious cycle of mesmerising development may occur if frustrations are misinterpreted.

JEL Classification: D00, D1, I3

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How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it... That we often derive sorrow from the sorrow of others, is a matter of fact too obvious to require any instances to prove it.

Adam Smith: The Theory of Moral Sentiments, p.9

1. Introduction

Rationality is a traditional assumption in economics. Formally by this is meant that a person has a stable objective function to maximize, implying that his behaviour is consistent and predictable. Economists see the economic problem as maximization, at the individual or social level, of some objective function subject to constraints.

Yet rationality in household theory is taken to imply something more than this. The objective function is called the *utility function* and has normative connotations. Achieving a higher value of the objective function is treated identically as achieving a higher level of welfare. Individuals are depicted as entirely motivated by self-interest and thus selfish. Someone who sacrifices his life for someone else will, according to this logic, be treated as selfish as he is considered to be pursuing his own utility. This has invited criticism (Kohn, 1986) and is, as argued in this paper, both inaccurate and potentially misleading.

Altruistic behaviour has attracted the attention of economists (Hirschleifer, 1977; Oswald, 1983; Stark, 1989; Chami and Fischer, 1996) and is typically modelled

by including the utility function of others into one's own utility function. Thus an individual may have a utility function written as follows:

$$U(c_1, u_2(c_2))$$

where c_1 is his own consumption and $u_2(c_2)$ is the utility of his family. It is common to model U as comprising two lower level utility functions(e.g., Stark, 1989). Thus:

$$U = w_1 \cdot u_1(c_1) + w_2 \cdot u_2(c_2)$$

where w_1 and w_2 are weights of the lower-level utility functions u_1 for himself and u_2 for his family.

This traditional approach has some important drawbacks. In its unattenuated form, it assumes perfect knowledge -- knowledge both of the utility function(including the utility function of others in the case of altruistic behaviour) and of the constraints. The formulation does not allow learning about the utility function of others. It is apparent that in the case of the altruistic model, u_2 should be interpreted as *the individual's own perceived utility function* for the loved ones. Clearly, even if the son has attained a high level of utility it would certainly not affect the father's overall utility unless it comes to his knowledge. For the same reason, fathers often dictate a lifestyle for the sons' benefit against their will in the belief that this is good for them.

In this paper it is argued that perceptions are fundamental to behaviour and shall introduce a general model that will accommodate revisions of perceptions which can be described as learning and personal development. Decisions are based on an *ex ante* perceived utility function(more appropriately perhaps, a strategy or decision function), rather than a known utility function, and perceived constraints rather than

known objective constraints. Altruistic behaviour is based on the pursuance of happiness for a projected larger self, effectively breaking "the walls which separate man from his fellow men." (Fromm, 1957, p.24). The theory is based on an assumption that human nature is fundamentally the same among human beings even though at any given time an individual will have perceptions that are specific to him and that make him different from others.

II. A Model of Human Nature

We assume that human nature is universal. What contributes to happiness is essentially the same for all human beings. Formally, there is an objective "utility function"¹ that relates the state of fulfilment to various "fulfilment attributes"² and it is common to all human beings³. We can write overall utility for any representative person j :

$$U = U(X)$$

where X is a matrix consisting of four kinds of attributes arranged against time: health attributes X_1 , sensory attributes X_2 , mental attributes X_3 , and, finally, spiritual attributes X_4 . The meanings of these attributes will be explained below. Thus,

¹ Actually, it is more appropriate to call this a "happiness function." Happiness is a state of mind that may transcend (sensual) utility, which is traditionally associated with the senses. Thus cars are useful and produce utility because they are comfortable and fast but do not necessarily give us happiness(though they may). In what follows, however, I shall use utility and happiness interchangeably.

² This approach is borrowed from Lancaster(1966) but Lancaster has in mind objective attributes, unlike what is referred to here, which are the attributes that a person himself realizes through household production.

³ C.f. Harsanyi(1997), p.141.

$$X = \begin{bmatrix} X_{1t} \\ X_{2t} \\ X_{3t} \\ X_{4t} \end{bmatrix} \quad \text{where } t \text{ is time period which extends to period } n.$$

Not everyone has the same capability of realizing these attributes, however⁴. Someone who is blind, for example, will not appreciate what is visually beautiful. This is not, however, because he will not enjoy what is visually beautiful but because he cannot realize the attribute in his life. *Realizing* an attribute requires a "household production" process that requires various inputs. While all human beings are assumed to have the same utility function in fulfilment attributes different individuals have different household production functions, both because of their different endowments and because of specialisation and increasing returns⁵.

While all human beings have the same happiness function they do not know the true happiness function⁶. Consider the following passage from Bertrand Russell:

In adolescence, I hated life and was continually on the verge of suicide, from which, however, I was restrained by the desire to know more mathematics. Now, on the contrary, I enjoy life... This is due partly to having discovered what were the things that I most desired, and having gradually acquired many

⁴ C.f. Sen(1992), p.148.

⁵ Yang and Ng(1993) discussed specialisation in the production of goods. Here we note that household production in the production of *direct objects of consumption* or attributes is also subject to specialisation. One thus needs to learn to enjoy (realize" the attributes associated with) classical music. Learning to enjoy classical music may prevent one from learning to enjoy watching sports games.

⁶ This line of reasoning remarkably parallels that of Harsanyi(1997), who distinguished between "informed preferences" and "actual preferences."(p.140-141)

of these things. Partly it is due to having successfully dismissed certain objects of desire... as essentially unattainable. But very largely it is due to a diminishing preoccupation with myself....(Russell, 1968, p.6)

Because of the limited life experience of each person, it is generally not possible to realize all the attributes that affect happiness and rank them. Still, individuals are confronted with choices all the time, and they are forced to make decisions. They are forced to make decisions by virtue of the movement of two kinds of cycles. First is what I call an *attribute/satiation fluctuation cycle*. Second is what I call a *perceived opportunity cycle*.

The attribute/satiation fluctuation cycle may be biochemically driven. Thus hunger, thirst, or sex drive seeks to be satisfied and may resurface after some time(satiation fluctuation)⁷. Different dimensions of the health condition may deteriorate and recover(attribute fluctuation). Fluctuations in some perceived attributes, particularly mental attributes, may have some unknown origin. For example, a sense of loneliness may strike from time to time. The state of one's well being therefore typically rises and falls. An individual will be triggered into action by virtue of the ups and downs of perceived attributes. These cycles are exogenous to the person in the short run but tend to become endogenous over the longer run. For example, the taking of addictive drugs will bring about an attribute fluctuation cycle which otherwise may not have existed before.

⁷ This can be described as a readiness or a capacity to realize certain attributes.

The perceived opportunity cycle refers to the coming and going of perceived opportunities for the production of attributes. The opportunities presented to the individual in the short run are given, but opportunities open to him in the long run may be affected by his decisions.

Because of the inherent impossibility of making decisions ahead of time for one's entire life individuals do not maximize a known life-time utility function subject to a known life-time opportunity set. Instead an individual at any one time maximizes an *ex ante perceived utility function* or, more appropriately, the *life strategy function*, over a *self-defined time horizon*:

$$U^*(X^*)$$

where X^* is a vector of *ex ante perceived fulfilment attributes in the period relevant to his decision period*. Compared to true marginal utilities derived from the true utility function U , the marginal perceived utilities of some of the elements in X (which may be positive or negative) are exaggerated, while others are assumed to be zero. The ability to undergo various household activities to produce fulfilment attributes and the ability to approximate the true utility function can be summarized into the term "life skills."

First among the constraints is the *perceived household production functions*: which consist of the set of activity opportunities A for transforming inputs of market goods and services, his effort, and time into *perceived fulfilment attributes*:

$$X^* = \sum X_i^*(A_i) + X_w^*(W) + \sum X_j^*(S_j), \quad j = w, 1$$

This says that perceived fulfilment attributes are also affected by the amount of work W , the effort made at increasing work skills S_w , and the effort made at increasing life skills S_l . These work and effort variables are often perceived to produce negative utility because they can be physically and mentally straining. For someone with an opportunity to earn more by working for longer hours (suppose, for example, he is paid by the hour at a uniform wage rate), the perceived marginal utility of W is negative in equilibrium, since the perceived marginal benefit of work in terms of higher income must exactly equal the perceived marginal disutility of work. The efforts on improving work skills and life skills, over the long run, can push out the constraints that condition the maximization process.

The *perceived fulfilment attributes* may not correspond with *realized attributes* resulting from the activity. The individual's past education and upbringing, as well as his own attitudes may affect the coefficients transforming A into X^* .⁸

Just as there is a true utility function along the perceived utility function, so there is a true household production function along the perceived household production function. It is, however, the perceived utility function and the perceived household production function that determine the individual's behaviour. The individual is frustrated when an activity is undertaken but it fails to generate the intended fulfilment attributes.

⁸ We shall assume that there is such a thing as free will so that one's attitude is not entirely determined by circumstances.

Other constraints include:

- availability and prices of goods and services
- opportunities in the labour market
- his human capital(work skills),

which together with the time devoted to earnings income T_w would constitute the budget constraint:

$$\sum C_j P_j = T_w \times \text{Wage Rate} - \text{Savings}$$

The wage rate is a function of his work skills, given the labour market conditions.

- allocation of time constraint: total time = time for income generating activities + time for upgrading work skills + time for upgrading life skill + time for other household activities:

$$T = T_w + T_{ws} + T_{ls} + \sum T_i(A_i);$$

- "mental capital" constraint: "mental capital" describes the degree of mastery of life skills at the time an individual faces the choices of life. The term *life skills* refers to the ability to undergo household production to produce fulfilment attributes and the ability to approximate the true utility function. The accumulation of mental capital depends on an ability to free oneself from and

reflect upon the constraint of the perceived utility function and that of the perceived production function.

- mental capacity constraint: total mental capacity = capacity used in reflection over consumption skills + that used in reflection over work skills ("R and D" for work skills) + that used in reflection over life skills("R and D" for life skills);
- legal constraint;
- social constraint;
- physical environment constraint.

Within the self-defined time horizon, the individual tries to maximize *perceived utility* subject to *perceived constraints*(some of which may coincide with true constraints). This he does by pursuing various activities. In pursuance of these activities he will need to consume market goods and services. The "household production functions" transform market goods and services, time, and other inputs into various "substantive goods" or "characteristics" that contribute to utility.

As the individual makes his decisions, he will in time see the results of those decisions. Perceived attribute outcomes are compared with actual outcomes, and perceived utility is compared with realized utility. The individual attempts to find the causes of the success or failure of his actions. This crucial process of interpretation will modify his behaviour and his perceptions through an adjustment in the perceived

utility function and the perceived constraints, leading to a change in his personal outlook and his life strategy.

Just as one can increase one's work skills by investing in human capital and thus increase the ability to earn a higher income, so one can increase one's life skills by a process of reflection. As one makes a greater effort in improving life skills, the perceived utility function will change--to approximate the actual utility function better. The time horizon will change so that he may become more forward looking. On the other hand some unhappy experience may make him more risk averse and reduce his time horizon. He may engage or avoid certain activities which are interpreted as opening him up to potential risks. Some pleasurable experience may make him overlook the opportunities for satisfaction offered by other dimensions of life experience, while reflections over suffering and happiness may increase the weight of spiritual pursuit in the perceived utility function.

III: Discussion and Implications

The Nature of Fulfilment Attributes(Substantive Goods)

The fulfilment attributes that we discuss in this paper are similar to the "substantive goods" that Scanlon(1991) and Harsanyi(1997) referred to. Again Harsanyi's view of substantive goods closely parallels the discussion in this paper in that he noted that a person's own experience and disposition is very much behind a

substantive good's being desirable. This paper goes further and argues that a fulfilment attribute has to be personally produced and realized to be meaningful.

The various fulfilment attributes can be complementary, substituting, or interfering. Complementary attributes are attributes that will contribute to a higher level of happiness if they are realized together(a healthy body may allow one to realize the fun associated with sports). Substituting attributes are attributes that can substitute for one another(the fun from a picnic may substitute for the fun from a party). Interfering attributes are attributes that will interfere with the realization of other attributes when they are realized(great taste from a cream cake may hurt one's health).

Among the health attributes are the full range of physical faculties of the body, including sensory, mobility, and thinking faculties. As well freedom from pain and discomfort will be included. Market goods and services are often needed to produce and maintain the level of these attributes.

Among the sensory attributes are various stimuli received by the body's faculties including sight, hearing, smell, taste, touch, and ideas and mental pictures created through various media.

Among mental attributes are the sense of security vs fear, the sense of recognition vs exclusion from one's identified social group, the sense of superiority vs inferiority, the sense of relative fulfilment vs deprivation⁹, the sense of self-esteem and

⁹ The rat race has attracted the attention of economists including Galbraith(1969) and Ng(1997)

self-realization vs the loss of such self-esteem and self-realization, and the sense of autonomy and freedom. Different individuals are assumed to value these mental attributes the same but they produce these mental attributes in different ways and with varying degrees of efficiency.

Mental attributes are often produced and destroyed through various household activities interacting with one another. Jealousy is a mental "bad" due to a feeling of relative deprivation as others are observed to possess something desirable. Fear is a mental "bad" that can be caused by observing a large influx of immigrants who bring new values and behaviour to the society. The resulting racist behaviour may cause more fear as a result of backlash prompted by racist behaviour. However, self-dignity and self-fulfilment may substitute for relative fulfilment, while confidence can overcome fear.

Desirable mental attributes are not only produced by household activities but also produced by the public sector through various good-will programmes, greater employment opportunities, and an enlightened system of education.

Spiritual attributes refer to the experience of realizing one's life potential through abandoning one's prejudices and overcoming human weaknesses, and that of realizing the life potential of others (compassion) through the stripping away of mental blocks and constraints in a single-minded and reflective pursuit of happiness. The spiritual experience is a process of identifying with a "larger self" and a process of learning about all the dimensions of the true utility function and the true household

production function, and overcoming constraints. This process is assumed to be satisfying in itself.

“Spiritual attributes” is really not the right word because the spiritual experience is a total life experience. It is of interest to note the difference between sensual utility and happiness. The utilitarian dictum of pursuance of pleasure and avoidance of pain assumes that pain and discomfort are always bad. But a degree of pain and discomfort, under the right circumstances and with the right attitude, may enable people to experience love and build up their strength, ultimately contributing to a higher level of happiness. In a sense, then, both pain and pleasure contribute to a richer life and spiritual fulfilment. Spiritual happiness has to do with transcending (which is not the same as annihilating) sensory pain and pleasure. It is the satisfaction derived from a feeling of mastering oneself and freeing oneself from misperceptions and from various obsessions that ruin many lives. It is a feeling of inner harmony, the opposite of which is so aptly described by Ainslie when he coined the term “picoeconomics”:

....behavioural economics does not necessarily deal with the case in which one part of an individual seems to undermine the efforts of another part.... Earlier I had proposed, with tongue in cheek, that the discipline that studies this case could be called ‘picoeconomics,’ that is, micro-micro-economics.... Just as classical economics describes negotiation for limited resources among institutions, and microeconomics describes such negotiation among individuals, so picoeconomics describes interactions that resemble negotiation among parts

that can be defined within the individual for control of that individual's finite behavioural capacity.(Ainslie,1992, p.viii)

Nature of the Perceived Utility Function and the Perceived Household Production Function

In contrast to the true utility function which determines how happy one really is, the ex ante perceived utility function is only a "strategy function". To see the nature of this strategy function consider someone going to a new restaurant and having to choose from an unknown menu. Although a "preference" may be registered it is not a true preference. The fact is with a limited life one cannot have a full range of experience to enable one to tell what is best for him. Living is a process of redefining the perceived utility function and discovering what is good and what is bad. At any given time, maximization is based on one's limited perception and prejudices. Information is generated and reinterpreted. Ex ante perceived utility functions and perceived constraints are redefined. Behaviour is modified.

The ex ante perceived utility function is the "utility functions" actually estimated in empirical studies. It is the basis on which households make their decisions regarding what to buy in the market place and what household activities to engage in. To the extent that information is imperfect and households have to operate in an uncertain environment they often look at one another in revising their strategy functions. Pingle(1995) showed that people often modify their behaviour and decisions by a process of imitation. Sah(1991) introduced the idea of "social osmosis" and suggested that individuals form subjective probabilities about apprehension, conviction, and punishment for criminal activities under influence from their social groups.

Just as the perceived utility function will change from time to time, the perceived household production function will also change. Thus when an individual is in a rat race trying to keep up with the Joneses there is no presumption that he becomes better off with larger and larger consumption of market goods. This is because the mental goods are being destroyed even as more and more material goods are consumed.

Nature of the Constraints

Many of the constraints that face households and govern behaviour are actually *perceived constraints* rather than actual constraints. Life is not only a process of discovering one's true utility function, but it is also a process of discovering one potential by ever pushing back perceived constraints.

The tragedy of life is that very often individuals ignore true constraints while creating imaginary constraints¹⁰. The life experience involves learning about the true constraints. As it turns out, some people engage in a process of virtuous circle of positive learning and development, while others fall into a vicious circle of negative learning and "mesmerising development."

Some people fail to invest in work skills and life skills not because of inherent irrationality, but because their limited outlook of life make them project a large cost in

¹⁰ Cf. Russell(1968), p. 6, previously cited.

terms of the marginal cost of effort and a relatively small return in terms of the benefits that will accrue in the future.

Benefit Cost Analysis and Valuation of Lives

Our model has important implications about benefit cost analysis. In general, most benefit cost analyses as practiced to day are based on compensated variations calculated with estimated utility functions. If the estimated utility functions are only perceived utility functions and they are subject to misperceptions, the compensated variations derived can be quite misleading in terms of welfare implications of policies.

In particular, it is common among economists to estimate the value of human lives by surveying respondents' willingness to pay in order to obtain marginal reductions in life risks. These exercises may be quite misleading if the respondents have wrong perceptions to begin with. For example, if we ask a teenager suffering from a depression how much he values his life the value reported may be negative and he may indeed behave as if life had negative value. But this may be because he is obsessed with his temporary set-back, and he may have completely overlooked the range of life experience that he may yet explore.

Discount Rates and Risks

According to our model, there are two reasons behind the appearance of a rate of time preference. First, the individual constantly redefines his time horizon as his

perception of his constraints changes. A poorer person living in a highly dangerous place with a low expected lifespan will, according to the model, have a high rate of discount because he does not look forward to living very long. An elderly person is also expected to have a high rate of discount. These different discount rates are not truly rates of time preference. Only because they perceive their constraints differently they form different strategy functions.

The second reason behind the appearance of a rate of time preference relates to the satiation/attribute fluctuation cycle. Depending on the ups and downs of the satiation/attribute cycle, something that is useful now may not be useful in the future. In the future, even though he survives, he may have not have the complementary attributes to take advantage of opportunities for household production, and his biochemistry may not give him the desire or the ability to produce a specific attribute.

This logic implies that it is rational to have a pro-present rate of time preference for specific consumption which is subject to the satiation/attribute fluctuation cycle, a smaller rate of discount for generalised purchasing power, and *no* discount for future utility.

A number of studies have borne out the implications of this theory. Lawrence(1991) is one of them. Poorer people are found to have higher rates of time preference, suggesting that time preference may not have anything to do with preference *per se* but with differences in perceived opportunities. The implication that older people have a higher rate of discount apparently is contradicted by Chaloupka(1991) who, in his study of cigarette smoking and addictive behaviour,

discovered that older people apparently do not discount the future at all. This result was inferred from the fact that the coefficient for consumption of cigarettes in the "future period" is not much different from that for consumption of cigarettes in the "current period." Actually, in the empirical study, reported current consumption is taken as "future period consumption" while the reported lagged consumption is taken as "current period consumption." The empirical study also required statistics on "consumption in the previous period." This was taken as zero for those who started smoking within the past two years, had stopped smoking more than two years before the interview, or had never smoked before. For others maximum consumption was used as a proxy for lagged consumption. To conclude that the elderly had a zero or low discount rate on the basis of such statistical results is erroneous. But the results do indicate a positive time preference for specific consumption, and suggest that observed "time preference" is related to the risk of non-survival. While realized "future" consumption is not discounted, the observed low demand elasticity with respect to price for the elderly (pp.739-740) suggests a *high* discount rate, because it implies that saving for future consumption by cutting back consumption in the face of a price increase is not valued highly by the elderly.

In an uncertain environment, traditional economics takes rationality to imply the maximization of the (mathematical) expected value of the objective function. If two alternative states of the world are possible, each with a known probability, the individual is assumed to maximize the probability-weighted average of the values of the utility function under the two alternative states of the world. This is the Bernoulli-

Morgenstern-von Neumann theory, but this has been questioned as being inconsistent with some observations¹¹.

Our distinction between *ex ante perceived utility* and *realized utility* means that people may be risk-averse independently of the effect of the shape of the utility function. According to the von Neumann framework, consumers are assumed to maximize the *expected* value of *realized* utility outcomes. Under our framework, persons may maximize a *perceived* utility function whose value may well vary with the variance of the utility even when the expected utility is the same. In particular, given the fact that a person has a limited time horizon and repeated trials for an extended period is often infeasible or irrelevant, he may well be averse to a prospect involving a small risk of a large welfare loss but a large chance of a relatively small welfare gain, even if the prospect implies an expected *ex post* utility gain. One cannot deny the fact that *ex ante* and at the time of decision making, 50 utils guaranteed is different from the prospect $(0, 100 | 0.5, 0.5)$. In terms of our framework perceived insecurity due to the variance of the realised utility is a mental bad independently of the utility derived from outcomes and may tip the balance of attraction in favour of the guaranteed 50 utils.

Racism, Parochial Nationalism, and the Productivity of Education

Racist and nationalistic behaviour stems from household production that creates "mental outputs" that are positive for some but negative for others. They stem

¹¹ See Fishburn(1988).

from the perceived good feeling of being more secure from the threat by aliens and superior over others. Clearly, the perception of threat is enforced every time a member of one's own race is attacked or unfairly treated. An economic downturn that throws people out of jobs may also increase perceived threat and thus create a "mental bad." On the other hand an economic recovery may reduce such perceived threat and thus create a "mental good." Any racist behaviour, unfortunately, is inherently counter-productive because it engenders ill will and destroys valued mental goods. On the other hand, a sense of security is promoted by a sense of equality, respect for one another, and protection under the law.

Welfare maximization is not achieved just by maximizing physical output. Larger physical output relaxes only one of the many constraints for welfare maximization. Equally, if not more, important is the pushing out of mental constraints. Resources can and should be devoted to pushing out our mental constraints. Individuals should be educated in life skills. With better mastery of the reality, an individual is better positioned to take advantage of the opportunities of life. However, to master these life skills requires a strong desire and an open mind to learn to interpret life experiences positively--i.e., in a direction that will enhance realized utility. The community should work to produce mental goods such as a sense of security, equality, and self-respect and should learn to steer away from mental good destruction activities such as intolerance and racist jibe. Education that causes a change in attitude by exposing an individual to more dimensions of life directly modifies the efficiency in the production of certain mental attributes and thus may have productivity far beyond the

imagination of those concerned only with the development of job skills or with education as a consumption good.

Conclusions

The subject of human nature has been an ongoing theme of great interest to economists¹². Veblen(1934), however, objected to the rationality assumption made almost universally by economists. In his view, human action is instinctive rather than rational, and is based on impulsive desires rather than maximizing calculations. To be sure, people often do act impulsively. Yet, behind most instincts there is rationality. The instinctive withdrawal of a hand from a flame is part of nature's plan to preserve his life. Sexual drives and instincts are part of nature's plan to preserve the species. An instinctive "time preference" reflects the working of the attribute/satiation cycle and life risks. Quite apart from these considerations, it is argued in this paper that individuals' perceptions are limited by their experiences and by their mental constraints, and this conditions maximization.

In recent years, the role of changes in perception in household choice has attracted increasing attention among economists. Pingle(1995) suggested that individuals may make choices on the basis of imitation when "comparing alternatives is relatively costly." (p.281) Dietz and Stern(1995) introduced the concept of "socially embedded preference." They again assumed that this was a departure from the rational choice paradigm. But to say that it is not rational to use a decision strategy because of cost seems to be a contradiction in terms. This paper suggests that household

¹² See Freeman(1993) for a historical review .

behaviour is based on maximizing a perceived utility function subject to perceived constraints. The perceived utility function is by nature a strategy function that is only an instrument for maximizing true utility. It changes with experience and with information collected from the social and physical environment. Likewise, perceived constraints as well as actual constraints change over time. Personal development is a process of learning about one's true utility function and learning about and realizing one's true capabilities.

Other economists(e.g., Viscusi, 1989) have used Bayesian analysis and considered the revision of subjective probabilities for alternative states of the world in household behaviour. This approach is in spirit very similar to that used in this paper. Perceptions are revised with experience all the time in a process akin to adaptive expectations. The difference between the approach of this paper and that of the "prospective reference theory" is that the prospective reference theory still assumes that households know their preferences with certainty. A central argument of this paper is that one really has to learn about one's own utility function. We also argue that a common utility function among human beings is consistent with divergence in expressed preferences. Thus Person A may use up a lot of resources to achieve self-recognition, while Person A may use up very little resources to do so -- not because their tastes are different but because their household production functions are different. Economists may have mixed up means and ends in their analyses.

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