

Rational Expectations and Rational Expressive Behavior

Hiroaki Hayakawa

University Brunei Darussalam,
Brunei Darussalam

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Authors: *Prof. Dr. Hiroaki Hayakawa*

University Brunei Darussalam, Brunei Darussalam

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Preface

How to understand human activities and behavior, or, more generally, the ethical nature of human existence itself, is a question that has long been a subject of debate among sociologists and economists alike. It is the question that has divided the two camps while guiding us toward a deeper understanding of our activities as agents of multiple orientations. This book presents my work on two themes about the ethical nature of human existence as spontaneous activities in relation to the enviroing world that this existence reveals to itself. Our first theme deals with human existence as socio-cultural agents who seek symbolic profits under a system of cultural symbolism and value patterns/norms, and the other deals with human existence as economic agents who seek economic profits under a system of relations that define the market equilibrium.

There is a close affinity between these two facets. Our activities as socio-cultural agents are anchored in a system of cultural symbolism and value patterns that are internalized in our institutionalized dispositions. As such agents, we seek symbolic profits by expressing our choices systematically in reference to this system. The rationality of such expressive behavior should, therefore, be as dictating and sensible as the rationality of seeking economic profits. The point we make is that expressive behavior would not be possible in a vacuum, that is, without some externally given sources of value patterns and symbolism with which to express our choices. This entails that socio-cultural choice behavior is intertwined with these sources that we discover in an

enviroming world through our own existence as socio-cultural agents. Specifically, the behavior expresses itself as a consistent norm-guided behavior that helps reproduce the same norms and value patterns and maintain the symbolic nature of our activities. Furthermore, such norm-guided behavior is not independent of the conditions of the bounded rationality in the sense that it helps reduce the cost of decision making and problem-solving, thereby serving as powerful heuristics that simplify otherwise complex problem-solving and lead to the attainment of symbolic profits at the same time. It is equally an important source of predictive and predictable behavior.

Our second theme relates to the legacies of rational expectations in economics in relation to the phenomenology of consciousness and existence in philosophy. The theory of rational expectations is rooted in the temporal nature of human consciousness and existence, in which the three moments of the temporality, namely, the past, the present, and the future are united. Just as in the case of socio-cultural agents, human activities as economic agents unfold in reference to a system of economic relations that define market equilibrium and thereby make it possible to anticipate what is coming and to fulfill this anticipation in the present through a consistent plan of actions. As human activities are temporal by nature, economic profit seeking would be an empty proposition unless it is related to a system of market prices, both present, and future, as important sources of signals that serve as guides for profit seeking. This economic profit seeking, therefore, is a behavior that is intertwined inseparably with a system of market relations that are mediated by the formation of expectations based thereon. By making the temporality of our consciousness and existence explicit in terms of intertemporal optimization and rational expectations, the theory of rational expectations is calling us back, once again, to the ethical nature of human existence in which our consciousness and existence work with the future, the present, and the past as three unified moments of our activities as forward-looking agents.

The rationality of expressive behavior resembles that of intertemporally rational behavior aided by rational expectations in that the institutionalized dispositions that internalize cultural value-patterns and norms reproduce these patterns and norms, just as rational expectations and decisions based on the market relations reproduce the market signals at equilibrium that are expected to come through. Both are predicated on the existence of a reference system of relations that are maintained either through institutionalized dispositions that internalize what is external or

through expectations that calls for the use of external information about the market equilibrium prices that are consistent with expectations. Both can be thought of as expressions of the bounded rationality as the complexity of the problem-solving is significantly reduced by relying on systematic external information without losing sight of what will come through as a result of choices we make.

We hope that this work sheds some new light on what appears to be complex phenomena of rational behavior, expressive or otherwise, as well as on the ethical nature of human consciousness and existence that grounds all of our choice decisions, be it for symbolic profits as socio-cultural agents or for economic profits as economic agents.

Hiroaki Hayakawa
April 10, 2019

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1. Introduction

This book has two chapters, one on the theme of the rationality of expressive behavior of socio-cultural agents in the context of cultural symbolism, and the other on the theme of the legacies of rational expectations in relation to the phenomenology of inner time consciousness and human existence as activities. The two themes are related to each other in that while expressive behavior of socio-cultural agents is embedded in a system of cultural symbolism and grounded in socio-cultural norms and institutionalized dispositions, rational expectations of economic agents are equally grounded in the objective relations that define the market equilibrium of all decisions made by forward-looking agents. Socio-cultural agents seek symbolic profits, which are possible only if the agents anchor their behavior in cultural value patterns and symbolism. Similarly, economic agents seek economic profits, which are possible only if the agents are placed in the market system that imputes equilibrium prices that allow them to form expectations that are consistent with such prices. Both behaviors are predicated on the existence of an external system of reliable information, be it a system of cultural symbolism or a system of market equilibrium prices, which guides agents in their profit seeking. Socio-cultural agents would be blind were they placed in a vacuum of no symbolism or no cultural value patterns/norms that would be visible only through the interactions of such agents, and economic agents, likewise, would be blind were they placed in a vacuum of no objective relations that would emerge through the interactions of forward-looking agents who count on such relations. Both agents, socio-cultural and economic, try to make optimal decisions in relation to what they seek under their environing world.

More specifically, the first chapter looks into the rationality of expressive or symbolic behavior that is guided by socio-cultural norms and a system of cultural symbolism that evolve over time. We attempt to characterize human behavior as expressive, norm-guided behavior facing bounded rationality. We argue that theories of institutionalized dispositions or habitus provide a basis on which to build our understanding of this behavior as a rational expressive behavior aimed at symbolic profits under constraints of feasible economic means, available information, the pressure of social sanctions, and the presence of psychological satisfaction. In particular, we address the following points: (1) how cultural value patterns and norms turn into institutionalized dispositions, (2) how a socio-economic order evolves and is constituted of institutionalized dispositions, cultural capital of lifestyles, shared expressive symbolism, and social norms, (3) how social want emerges as a convoluted want constituted of social facts and social desire for upper-status identification, (4) how the behavior based on this want can be characterized as rational behavior that seeks symbolic profits, and (5) how this behavior is related to the bounded rationality in problem-solving. It is argued that it is through expressive behavior based on institutionalized dispositions and the bounded rationality that a socio-economic order emerges and evolves as a system of cultural symbolism and value patterns. We make a point that the behavior of socio-cultural agents must be grounded in an envioning world of a system of cultural symbolism for them to be oriented properly and achieve symbolic profits. Rather than yielding to the view that the behavior of socio-cultural agents is too complex to be abstracted as rational behavior, we argue that symbolic profit seeking is just as rational and sensible as economic profit seeking. But, this has to be demonstrated in a convincing manner. We hold a view that symbolic profit seeking and economic profit seeking are essentially two sides of the same human behavior that seeks to fit itself to the envioning world with profits serving as a measure of success.

The second chapter looks into the legacies of the rational expectations revolution that took place in the 1960s and 1970s, in relation to an equally revolutionary movement in philosophy that preceded it, namely, the phenomenology of internal time consciousness *a la* Husserl and human existence *a la* Heidegger. Keynes's *General Theory* was a revolution against classical economics, but this theory, either in theory or in econometric practice, is based on a particular epistemology that is not consistent with what this phenomenology revealed. The Keynesianism was met by a counter-revolution known as the theory of rational

expectations. In the transitional period, Friedman introduced the idea of intertemporal optimization through his permanent income hypothesis and advocated a unified treatment of consumption, investment, and asset demand as inseparable facets of the same decision-making. With Muth's insight taken into account that expectations should be rational and consistent with what the market actually informs at equilibrium, Lucas unified this consistency with the principle of intertemporal optimization. This path-breaking epistemology led to a new view on the working of the economy and changed the course of economic sciences and the art of policy-making ever since. But, as we show, there was, prior to this development, a radically new movement in philosophy known as the phenomenology of human consciousness and human existence. We argue that this phenomenology is intimately connected to the theory of rational expectations and intertemporal optimization. More particularly, we bring to the fore the connection between Husserl's internal time consciousness and Heidegger's characterization of Dasein as unified ecstasies of temporality on the one hand and the new paradigm of the theory of rational expectations that combined intertemporal optimization with market equilibrium conditions on the other. In so doing, we also observe that the basic tenet of the theory of rational expectations can be thought of as a radical shift in viewing human activities, and, at the same time, as a return to the ethical nature of human existence, which dates back to Aristotle who viewed human existence as a life of activities under the virtues of character and intellect.

Human activities are all connected to one another under a unifying virtue of intellect, and that our understanding of human behavior is incomplete without knowing how it is related to an enviroing world that is revealed to us through our own activities. Human agents are symbolic and socio-cultural as well as economic in their orientation, and the rationality of human activities makes sense only in reference to a system of cultural symbolism under which symbolic profits are sought, or to a system of market prices under which economic profits are sought. Human activities, therefore, unfold as a pair of what they seek and an enviroing world in which this seeking takes place. Essential to profit seeking is to anticipate what is coming and to fulfill it through our own activities that leave their traces behind as history. The rationality is a name given to the temporality of human consciousness and existence that discover an enviroing world of means, values, and symbols that make profit-seeking possible, meaningful, and befitting to our activities.

2. Socio-cultural Evolution, Institutionalized Dispositions, and Rational Expressive Behavior

Introduction

How to characterize human behavior as an expressive behavior of *homo socius vis-à-vis* social norms and cultural symbolism is an extremely demanding question to answer. This paper attempts to tackle this question by addressing (1) the evolutionary nature of a socio-economic order that is constituted of institutionalized dispositions, cultural capital of life-styles, shared expressive symbolism, and social norms, (2) the formation of social want as a convoluted want constitutive of (a) social facts of lifestyles of social classes and (b) the socially acquired desire for upper status identification, expressed as an emulation and avoidance pattern over such styles, (3) the rationality of human behavior as an expressive behavior based on the social want, and (4) the plausibility of norm oriented expressive behavior under conditions of bounded rationality in problem solving. We introduce the notion of socio-economic rationality that captures expressive norm-oriented behavior as rational symbolic profit seeking behavior. We hope our inquiry will answer Herbert Simon's call (1978) for an active intercourse between economic and other social sciences,¹ and Hodgson's (1986) suggestion that in understanding human behavior it is not necessary to fall into the trap of complete voluntaristic individualism (upward causation) nor into the trap of the structural determinism (downward causation). We also answer

why postulation of a utility function on an *a priori* basis is inadequate to deal with cultural-expressive behavior.

Given the complexity of the question, our inquiry proceeds, step by step, in the following sequence and organization: First, we need to review critically the three major theories on the institutionalization of human dispositions, namely, Adam Smith's theory of moral sentiments, Veblen's theory of the leisure class, and Bourdieu's logic of practice and distinction. This is followed by a review of Parsons' structural-functional theory of social actions and social systems. Because Parsons' theory identifies all essential elements that are necessary for society to be integrated as a system of an enduring order, we believe it helps place the first three theories in relation to one another, particularly from the standpoint of institutionalization of dispositions and cultural symbolism. Rather than expressing these theories in general terms, we find it necessary to take this step in order to abstract a common core that runs through them and which helps lay a foundation on which to build a theory of expressive behavior under cultural symbolism. Then we discuss how human tastes/preferences/dispositions are shaped by social and cultural norms and how they constitute social want as a convoluted want constituted of social facts and socially inculcated desire for upper status identification. We propose that characterizing human behavior as a rational socio-economic behavior requires two things: (1) socially acquired dispositions that keep behavior of individuals in proximity to each other to form norms and (2) a social space endowed with shared cultural symbolism as well as with cultural capital made up of accumulated knowhow of consumption which is necessary for making symbolic profits. Social want is not privation in the abstract since it arises only when an individual lives in a particular social space endowed with a particular symbolism. It is, therefore, not possible to identify this want with any utility function given *a priori* no matter how many arguments are entered. We argue that social want is a convoluted want, most usefully defined by convoluting socially acquired desire or proclivity for status seeking and identification and the particular properties of a social space that can serve the motive for emulation and avoidance. We show that the choice behavior under such preferences/dispositions can be treated as a 'rational behavior' in the sense of seeking symbolic profits subject to feasible economic means and other constraints. This proposition, therefore, establishes that man, whether isolated as an independent individual or embedded in a socio-cultural context as *homo socius*, is a prudent being regardless of the nature of underlying preferences/dispositions as long as human activities

are teleological in nature (aiming an end). The concept of rationality, therefore, is not a patent of the field of economics. If man as *homo socius* is rational in terms of symbolic profit making and upper status seeking, such rationality must be mediating evolution of a socio-cultural system. Our paper argues that such is the logic of institutionalized behavior and cultural evolution.

Views on human behavior, unfortunately, have been split between two extreme poles, one that assumes that human beings are essentially *homo oeconomicus*, i.e., autonomous agents guided by instrumental goal orientation dictated by the principle of instrumental rationality, and the other that assumes that human beings are *homo sociologicus* (or *homo socius*), i.e., voluntary agents whose dispositions are socially formed and reflect society's common normative values that hold their behavior within socially meaningful and acceptable bounds, and whose behavior is expressive in nature under cultural symbolism. These extreme views are powerful in their own right, but they have left a middle ground largely unexplored, in which the two views may be subsumed into a more general notion of rational agents. If we want to characterize human behavior as an expressive behavior with respect to cultural symbolism, we need to ask if it is possible to integrate the two poles under a more comprehensive view that human behavior is an expression of socially acquired dispositions through use of whatever symbolic means there are in the context in which it is expressed. It should be mentioned that there have been new important lines of research that are helping bridge the gap, such as psychological economics started by Kahneman & Tversky (1979), rational choice sociology, and experimental economics and game theory, all of which are helpful in understanding expressive behavior. As Thaler (2000) suggested, it is time to shift our focus from the notion of *homo oeconomicus* to a more comprehensive notion of *homo sapiens*, whose distinguishing feature is the sociality and communication.ⁱⁱ

Before proceeding to a critique of the four theories, it is useful to clarify the position that this paper is taking. Under a sociological perspective, it is argued that the distinguishing feature of a socio-economic order is that the constituent members of society, possessing socially acquired dispositions, are guided, in their behavior, by common values (including rules of conduct). Economists may express this fact by saying that such values set the normative parameters within which autonomous agents behave under the principle of instrumental rationality (through means-end relations), whereas sociologists may go a step deeper into the psychological and sociological makeup of individual agents by

arguing that such values, when internalized into their motivational structure, may form dispositions prone to follow a certain logic of practice that is meaningful in social and symbolic terms. In phenomenological terms, we can say that human beings, through their acts of intentionality, interpret the state of their being by understanding their relation to a world they find themselves in, and that if this environing world is endowed with certain common values and cultural symbolism, an agent's interpretation of his being cannot remain aloof of them. Human activities always involve others. One cannot, therefore, ignore the fact that such values play a decisive role in governing human activities, whether in scientific endeavors, business transactions, or community activities. This is also true of the religious values as the source of faith and beliefs that ground human beings as loving and caring beings. Thus, to recognize that a socio-economy as an organized system is a spontaneous order evolving with social norms, cultural symbols, and ethical and religious values is only a first step toward understanding human activities as an intricately organized expressive behavior, not as activities that are largely independent of these values. It is the stand of this paper that abstracting economic transactions merely in terms of simple self-centered calculations, without knowing what 'being self-centered' really means and without accounting for on what factors such calculations are based, is not enough in grasping a socio-economic order as an integrated totality. Economic motivations that come from the principle of the *in-order-to's* of human actions become meaningful only when they are cast in the light of what makes man's living in this world profitable in terms of his life-project to be completed. It should be reminded that the good (the end) that human actions aim for is intertwined with the good of society in Aristotle's ethics.

With this stand, this paper starts with a critical review of the major institutional theories on the issue of how a socio-economic order emerges and holds together all categories of values: economic, social, cultural, ethical, religious, linguistic, and even aesthetic. This review is necessary to clarify and analyze what is meant by the institutionalization of common normative values as the functional foundation of a social system. We will show that it is the principle of institutionalization of dispositions that underlies the three theories, which are essentially theories of socio-cultural evolution. They share a similar generative principle and have a homological structure with differing points of emphasis. We know that Parsons and Bourdieu, as sociologists, are adamantly opposed to the economists' view of rational behavior that reduces human

agents to the level of instrumental goal-orientation or mechanistic responses. Parsons insists in *The Social System* that this scheme of instrumental goal-orientation is not adequate in explaining social actions in a social system, for which institutionalization of common normative values is quitesential. Likewise, Bourdieu, in *The Logic of Practice*, is opposed to the economists' description of rational agents as mechanistic responses, and, in *Distinction*, he argues that economic variables are not enough to account for symbolic profits that social agents seek. Such criticisms should not be ignored, but, at the same time, it should be kept in mind that the disposition-based practices aiming at symbolic profits cannot be meaningful performed in a socio-cultural environment without mediation of a selective or screening principle, which implies that some criterion is necessary for selecting a certain object from a feasibility set. Although Bourdieu points to the spontaneity of practices, the difficulty of problem solving involved in such practices could be even more demanding than any straightforward problem of making a choice from a given feasibility set, if the practices are to be non-mechanistic and socially meaningful. This is the reason why the cultivation of the codes of decorum by the leisure class is time consuming - a virtue of consumption in Veblen's view. One may be able to choose easily what one likes, but, when it comes to symbolic profits, one must ponder on what would be the best choice to make in symbolic terms. This is why we think that the logic of practice may become greatly affected by the accumulated knowledge of economizing schemes of problem solving that can serve as socially and culturally meaningful heuristics. Human beings go through the process of trial and error, and successful experiences tend to collect momentum in solving complex problems. In dealing with human behavior in the context of a socio-cultural environment, it is necessary to go beyond the conventional dichotomy between preferences on the one hand and the situations in which choice making is embedded on the other, and to integrate the institutionalized normative values with the rationality principle that mandates that one select a most effective object of choice from the alternatives that are feasible, whether for cultural profits or social comparison or any other gain, without losing sight of the spontaneity of human existence and a socio-economic order in which this existence is intimately situated. What we intend to accomplish through our examination of these theories of institutionalization is, therefore, to bring the fact to better understanding that human beings, through their acts of intentionality, more particularly, through their acts of categorical intuition, synthesize the unreal objectivities ideationally and

construct a social and cultural space in which the choices made are conferred with a symbolic meaning that would otherwise not exist.

I need to ask for patience as the four theories are reviewed through their critical parts. This step is necessary in order to identify the core idea and the homological structure of institutionalization on which our theory of symbolic expressive behavior is based. We start with Adam Smith as the forerunner of the tradition of spontaneous order and institutionalization.

Adam Smith's Theory of Moral Sentiments and Cultural Evolution

Adam Smith's thesis, *The Theory of Moral Sentiments* (1759) (hereafter MS), explains how our moral sentiments of approbation and disapprobation, combined with moral faculties that respect moral rules of conduct, can account for an evolutionary process of a harmonious economic order by instilling, in man, ambition and industry to accumulate wealth for the purpose of obtaining fancy contrivances as objects of admiration by spectators. This race of wealth accumulation splits the society into two ranks, high ranks (the wealthy) and low ranks (the poor), the former respecting such virtues as freedom, independence, and generosity whereas the latter respecting such virtues as prudence, justice, frugality, industry, and strict observance of rules. The race also gives rise to emulation and avoidance as the rich seeks to distance themselves from low ranks by setting a new fashion that avoids the meagerness with which their fashion may become associated when it has been emulated successfully by those of low ranks. People of low ranks, however, work industriously, develop sciences and arts, and produce innovations, which will enable the economy to produce fancy contrivances that are acquired by the wealthy in setting their fashion. The race, through differentiation of classes and virtues, produce employment opportunities necessary to feed the multitude while the economy becomes more extensive in its order. The principle of custom and habit, as an extensive principle, mediates the exact process of evolution by habituating man's tastes and aesthetic sense of beauty and propriety of all objects of choice, modes, arts, and judgments. Everything falls into the hand of Providence.

Adam Smith holds that if man is only interested in the direct (raw) utility of anything, the economy does not grow as an extended order. There simply won't be enough force to drive an economy. To make this point, Adam Smith starts Part IV of *The Theory of Moral Sentiments* with an observation that the utility is

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one of the principal sources of beauty and that objects of happy contrivance produced by the art of production are valued more than the end for which they are produced and that the whole merit of such objects consists in attaining them, which is worth all the toil and the adjustment of the means to acquire them (MS, 257-258). A refined watch is a good example, as what interests man is not so much the convenience and the knowledge that it affords as the refined nature of the good itself (MS, 259). But, this subtle difference makes an enormous difference in the way the economy develops its order. The raw utility that articles of conveniency yield is limited and does not justify the toil needed to attain it. But if such articles become objects of admiration by spectators (acquire symbolic values), the merit of acquiring them takes on a different meaning, and man's striving for this end collects a force that perpetuates and drives economic development. When a poor man is exposed to the articles of conveniency displayed by the rich, there arises in him ambition to be wealthy by being industrious. Man's endeavors to acquire talents, professions, better jobs and his willingness to bear the required burden of hardship and sacrifice all originate in this ambition, although those observable articles of vanity sought so earnestly do not yield much of the conveniency dreamed of, in comparison with cheaper articles of similar utility (MS,259-261). The principal cause of this quest for elegant contrivances as means of happiness is rooted in man's proclivity to pay more attention to the sentiments of other people for his mode of living and in man's belief that such fancy contrivances are objects of admiration and applaud of other people, although this belief is separate from how much such goods contribute to the happiness of their masters (MS, 261-262). The real satisfaction, with all its implications, is confounded into a view that man's unceasing endeavors in the economy that is turning out fancy goods of contrivance and man's ambition to win admiration of other people by becoming wealthy and obtain such goods are all part of the harmonious movement of the system.ⁱⁱⁱ

The economy is thus viewed as a grand harmonious order. People find a real source of satisfaction in fancy goods of contrivance as objects of admiration, the system arranges itself beautifully by keeping people industrious, wealth is sought as something noble, and the economy expands as a harmonious order with increasing opportunities of employment for the multitude. There is nothing intrinsic about such confounding of satisfaction, beauty, order, and nobility. Although it may be a deception, this harmony keeps the industry of mankind in perpetual motion and the economy as an extending order. This industry and ambition is

the source of all sorts of innovations that embellish our life and push the frontiers of sciences and arts. The order of the economy never loses its harmony as the wealthy, whose stomach is far less than their desires for conveniency, consume only a small but the most precious portion of the output produced in the economy while the rest trickles down to lower levels to feed those who actually produce the trinkets and baubles enjoyed by the great. Our love for the beauty of order and elegant contrivances also permeates our desire for better institutions that promote the public welfare. Thus, the moral sentiments for approbation rouse man's ambition and industry, spawn innovations, promote development of sciences and arts, adore accumulation of wealth, extend the order of an economy with the employment of the multitude, and advance better institutions for public welfare, all part of Providence that sees to it that the entire system be kept in a harmonious movement without leaving any part unaccounted (MS, 262-268).

Elaborating on the origin of ambition and the distribution of ranks (Ch. II, Section II, Part I, 70-83), Adam Smith argues that because we are disposed to sympathize more with joy than with sorrow, we want to demonstrate our riches, conceal our poverty, pursue riches, and avoid poverty. Our ambition is to acquire refined articles and to derive from this acquisition the advantage of sympathy, complacency, and approbation from the spectator. This vanity is only founded on our belief that we are exposed to the attention and the approbation of other people. It is this observation and admiration by other people which renders greatness to the objects of envy, and compensates all the toil, anxiety, and loss of leisure that is forfeited in its acquisition (MS, 70-72).

Despite the grand beauty of a harmonized system, Adam Smith is quick to point out that our disposition to admire the rich and neglect the poor causes our moral sentiments to be corrupted, although this corruption is part of the great order. There are two roads man can take in gaining the admiration of mankind, either by taking the road to wisdom and virtue or by taking the road to wealth and greatness. Wisdom and virtue are admired only by a select few, but wealth and greatness are admired by the multitude. It is by taking the latter road that our moral sentiments become corrupted, but this corruption is not uniform. It splits between the inferior and superior stations of life. In the inferior stations in which most men find themselves, men develop the virtues of prudence and justice in seeking professional abilities and in observing the rules of justice, which are reinforced by the sentiments of neighbors. In the superior stations of life, however, where the success depends on winning the favor of the proud and

vain superiors, the great virtues are tamed by the external graces of a man of fashion. But, because of man's disposition to imitate the living of the rich, men of the superior stations distance themselves from men of the lower stations by setting a fashion or a decorum, with all vices and follies to go with it. Men of the lower stations emulate this fashion as a noble object of admiration. In this way, the fashion set by the rich, through envy, takes most men away from the road to the great virtues, as they remain ambitious at emulating this fashion, although it is the illusion that it would give the successful emulator the joy of a more generous living and earn the respect and admiration of the spectator. Those at the lower stations of life are not all miserable, as they, by their virtues of prudence and justice, work with diligence, produce innovations, and develop sciences and arts, which are all essential in keeping the economy going as an extending order. The point is that their moral sentiments are affected with the ambition to earn the respect and the admiration of the spectator. It is such affected dispositions that are the source of man's industry. Thus, the economy as a harmonious order thrives as a perpetual race to get the greatness and power of wealth. Corrupt as man's virtues may be, such corruption is part of Providential Guidance. From the standpoint of evolution, it is important to note that society bifurcates into the upper and lower stations, which turn the moral sentiments into different dispositions and cultivate different virtues, one for consumption and the other for production. Since such dispositions and virtues become what are expected of men belonging to the different stations, they acquire the moral force, and, in this sense, can be regarded as institutionalized dispositions (MS, 84-90).

While our moral sentiments become corrupted, Adam Smith holds that how our moral sentiments are shaped is affected by the principles of custom and fashion, or by the principle of habituation, which can cause different judgments of beauty to emerge in different ages and nations. Repeated observation of different things habituates our mind to appreciate similar connections in similar situations, and such habituation gives rise to our custom of connecting different things, with the sense of the propriety or the impropriety of varied combinations of things. Under the principle of habituation, a fashion, initiated by men of high ranks of life, through repeated observation, acquires the sense of being something genteel and magnificent. As this fashion is emulated by men of inferior ranks, it acquires the character of meanness and awkwardness and loses its grace it once had. Custom and fashion are an extensive principle as their influence covers all objects of choice, be they modes of dress, furniture, poetry, music,

architecture, manners, and so on. They even influence our judgments of the beauty of natural objects, as in our appreciation of a certain middle or the general pattern with respect to the features of things, animate or inanimate. Thus, custom and fashion habituates our mind to see, or, even to judge, certain things as beautiful or appropriate and other things as distasteful and inappropriate. In Adam Smith's view, how our mind sees certain things in certain ways, with the sense of propriety or impropriety, is not something that can be assumed given, but rather a product of custom habituating and impressing our mind to see things in certain ways, although custom is not the exclusive principle of beauty. If custom and habit permeates our sense of beauty and propriety of things, there is no reason why it does not influence, in some way, our sense of beauty on human conduct. But, this influence will be limited because the virtues of the inferior ranks of people such as parsimonious frugality, painful industry, and rigid adherence to rules are viewed as mean and disagreeable, while they are also connected with the abject, cowardly, ill-natured, lying, and pilfering nature of their disposition. On the principle of custom and habit, Adam Smith adds that the golden mean of virtues observed in those who are most esteemed, being emulated by many, will guide the course of the development of the propriety of character and behavior. Admitting that custom and habit affect what is regarded as agreeable, appropriate, or beautiful, in seeing things or in determining conduct, such influences are only limited to the propriety or impropriety of particular usages of our virtues or behavior, although good morals may be thwarted and seemingly immoral particular actions may be accepted as lawful and blameless. But, again, this is all part of the order under the guidance of Providence (MS, 288-304).

We should not ignore the fact that while Adam Smith draws a picture of a grand system of harmony that originates in our moral sentiments, he does not forget to place an equal emphasis on the importance of the general rules of conduct in preserving the order of our society. He holds that man is endowed with a particular power of perception by which to distinguish the beauty and the deformity of passions and affections, and with a special faculty of the moral sense by which to judge their own conduct. It is by the power of this perception and this moral sense that man, by observing the conduct of other people, forms certain proper rules of conduct. These rules are not determined by any *a priori* examination of what actions are to be approved or disapproved by philosophical reasoning, but rather they are based on our own experiences of what has been approved by our moral faculties and

our natural sense of merit and propriety. Custom and habit may influence the particular usages of our virtues or behavior, but man's conduct itself has to observe the proper rules, although such rules themselves cannot escape the influence of custom and habit because these principles habituate our sense of beauty and propriety. Adam Smith holds fast that this regard for the general rules of morality is, as man's duty, a principle of the greatest consequence in human life, and only by which man's actions can be directed. This principle separates "a man of principle and honour" from "a worthless fellow". Without a reverence for the rules of morality, the very existence of human society would crumble into nothing. Adam Smith says that the sense of duty is too important to the happiness of mankind to leave it to the slow and uncertain artificial reasoning and philosophy, while noting that religion has already given sanction to these rules. The observance of the rules of conduct is not without its own recompense; unlike man's industry, prudence, and circumspection which have their recompense of success, wealth, or honors, the practice of truth, justice, and humanity has the recompense of confidence, esteem, and love of others. Smith holds that the observance of the general rules of morality can only be supported by the strongest motives of self-interest, which includes both self-regarding and other-regarding. In fact, one without the other is destructive of its foundation. Thus, Adam Smith argues that our natural power of perception, our moral faculties, and our strongest motives of self-interest (both self-regarding and other-regarding) will, through experience, be able to grasp moral rules of conduct by which to guide our conduct in whatever circumstances we find ourselves, and that these rules keep the human existence in harmony with the entire system (MS, 223-241).

This is the grand order of society as envisioned by Adam Smith. It is a view that connects all aspects of human existence (tastes, dispositions, judgments, production, sciences, arts, innovations, ambition, industry, employment, the sense of beauty, nobility, and propriety, and what not) into a unified harmonious order under moral sentiments for approbation and moral faculties. While the principle of custom and habit shapes the course of evolution of this grand order, it is the motive to emulate the life-styles of the superior stations of life (and to avoid those of the lower stations) that drives an economy to an ever greater order with moral sentiments turning into two different dispositions and virtues, one for consumption and the other for production and innovation. Adam Smith's theory was inherited by Thorstein Veblen, who puts forth another similar evolutionary theory under the title of *The*

Theory of the Leisure Class (1925) (hereafter LC) with the moral sentiments replaced with an instinct of workmanship that again turns into two diametrically opposed dispositions and virtues. We now review his theory.

Veblen's Theory of the Leisure Class: The Canon of Conspicuous Waste

Rather than starting with moral sentiments, Veblen starts with an instinct of workmanship, which is nothing other than man's acquired taste for productive and effective work and distaste for the contrary. It should not be identified with an instinct in the deep psyche, since it is an aptitude to be able to separate what is productive and what is futile, which is a capacity socially acquired. It is this instinct that influences the apperceptive activity of our mind and habituates our tastes and the sense of beauty, nobility, and propriety. It cultivates our sense of beauty by blending the generic and the honorific beauty, and by this blended cultivation our tastes conjoin the brute efficiency and the honorific reputability. Through the succeeding phases of cultural and industrial development, there emerges a leisure class with the canon of conspicuous waste as its dominant mode of tastes. This canon then serves as a selective principle that screens innovative goods for their serviceability on the measure of honorific reputability. Veblen's theory is an evolutionary theory that accounts for the emergence of an invidious culture that adores honorific waste as an expression of the life of leisure. It is derived from a socially acquired aptitude for productive work, called the instinct of workmanship, which steers the course of socio-cultural evolution through habituation of the apperceptive activity of mind as well as through circumvention of the sense of beauty.

The instinct of workmanship works itself out through stages of socio-cultural evolution, starting with a peaceable barbarian/savagery stage in which the incentive and the scope of emulation is still limited, through a predatory phase in which exploit and acquisition by war and seizure is praised more than industrial employment, and to a quasi-peaceable phase of an incipient organization of industry and private property, in which accumulation of wealth becomes a common basis of esteem in the community with the highest honors still being granted on predatory or quasi-predatory efficiency in war or statecraft. The acquisition of wealth, as the source of popular esteem and self-respect, now sets in motion in this stage a process of the struggle for a higher relative standing against competitors. The instinct of workmanship

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is thus channeled into a straining race for pecuniary achievement (LC, 36-40).

The struggle for the attainment of pecuniary reputability works in different directions for different classes. While this struggle takes the form of increased diligence and parsimony for those whose actions are tied to field of productive efficiency, the dominant incentive of the superior pecuniary class is the gaining of abstention from productive work, which is regarded debasing to a spiritual human life. In the predatory phase, particularly, productive work becomes associated with a mark of weakness, subjection, and inferiority. Thus, the life of leisure establishes itself as the most definitive evidence of pecuniary achievement and reputability. Pecuniary emulation of this exemption from labor continues to inhibit the habits of industry and thrift. Wealth as a direct meritorious measure of social standing is now taken over by insistence on the exemption from productive labor. The life of the leisure class, in this way, becomes institutionalized with all its honorific and meritorious requisites (LC, 41-45).

With the leisure class comes refinement of a code of decorum (refined tastes, manners, and habits of life). While manners, both as a symbolic expression of the relation of status and as a sign of gentility, are intrinsically good, the ulterior economic ground of a code of decorum lies in the honorific character of leisure, and demonstration of proficiency in it, as the “voucher of a life of leisure”. Thus, conspicuous leisure grows into a detailed code of decorum as well as into discriminate tastes for the decorous nature of consumption (LC, 50). Personal service also becomes an important economic institution for consumption purposes. Initially leisure is performed vicariously by housewives and menials for their masters, but as competition for conspicuous leisure gains in scope, there emerges a subsidiary leisure class comprised of servants of various grades with a division of labor among them. These servants spend vicariously the leisure of their masters or corporate households all for the demonstration of the pecuniary reputability of the leisure class (LC, 56-59).

Parallel to the development of the institution of conspicuous leisure is the beginning of differentiation in consumption based on pecuniary strengths in the earlier quasi-peaceable stage. As competition for conspicuous leisure becomes increasingly strenuous, gentlemen of leisure turns to consumption as another means of demonstration of their pecuniary reputability, seizing those innovations that turn out more elaborate goods for consumption. They cultivate their tastes and learn to discriminate the noble from the ignoble among goods for consumption. How to

live a life of ostensible leisure, by demonstrating refined tastes for manners and through consumption of appropriate goods, becomes just as important as demonstrating conspicuous leisure. Thus, conspicuous leisure and conspicuous consumption become the social norm of the leisure class (LC, 60-64). As wealth accumulates and as conspicuous leisure and consumption is increasingly refined, the leisure class becomes differentiated with a system of ranks and grades, which is furthered by inheritance of wealth and gentility. With the proper leisure class at the top, there emerges hierarchical classes of impecunious or half-caste gentlemen of leisure with various degrees of dependence on the upper classes.

Weblen's view of the life process in an invidious pecuniary culture is most succinctly described in the following passage.

The accepted standard of expenditure in the community or in the class to which a person belongs largely determines what his standard of living will be. It does this directly by commending itself to his common sense as right and good, through his habitually contemplating it and assimilating the scheme of life in which it belongs; but it does so also indirectly through popular insistence on conformity to the accepted scale of expenditure as a matter of propriety, under pain of disesteem and ostracism. To accept and practice the standard of living which is in vogue is both agreeable and expedient, commonly to the point of being indispensable to personal comfort and to success in life. The standard of living of any class, so far as concerns the element of conspicuous waste, is commonly as high as the earning capacity of the class will permit—with a constant tendency to go higher. The effect upon the serious activities of men is therefore to direct them with great singleness of purpose to the largest possible acquisition of wealth, and to discountenance work that brings no pecuniary gain. At the same time the effect on consumption is to concentrate it upon the lines which are most patent to the observers whose good opinion is sought; while the inclinations and aptitudes whose exercise does not involve a honorific expenditure of time or substance tend to fall into abeyance through disuse (LC, 86).

In an invidious culture, man, as a socially acquired character, must be disposed to seek as much wealth as possible and to express consumption that this wealth affords using signs of conspicuous waste. Such dispositions not only optimize the responses made by the critics and hence aid the attainment of the social esteem within the earning capacity of the individual, but also avoid the negative sanction of being outcast if expressed consumption deviates too

much from the norm of the standard of living most agreeable to the class of his belonging. Thus, the expressive behavior based on institutionalized dispositions is oriented to the norms of the relevant critics. All this implies that an invidious culture is made possible only by preferences turning into dispositions that are institutionalized, in that what man is disposed to do meets the criterion of being expedient to his goal and agreeable to the critics. At the same time, such culture must also be endowed with cultural symbolism that is shared across all social classes, so that the critics agree on what is appropriate and what is disagreeable. How do such dispositions emerge? The answer lies in the formation of habits of thought.

In Veblen's thought, habits of thought are an organic complex in conscious life, in which the economic interest is not isolated from all other interests. The canon of honorific waste traverses the canons of moral conduct, beauty, utility, ritualistic fitness, and even scientific sense of truth in the community. The institution of the sacredness of private property is no exception; it is traversed by the habit of accumulating wealth for its reputable value of conspicuous consumption (LC, p. 88-89). Likewise the popular sense of what is useful and beautiful and what is serviceable in consumable goods is influenced by the canons of reputability. This is how the beautiful and the honorific meet and blend. It is, therefore, no longer easy to separate the intrinsic beauty from the honorific service quality. The beauty of an object, under this blending, subsumes both features, its expensiveness and its beautiful features. Such is the case with many consumable articles such as dress and household furniture (LC, 95-97). The notion of beauty in this blended sense is not uniform among different classes. Just as classes are differentiated with their own norms of reputability, so are matters of taste allowing for diverse views on what is beautiful and honorific. But, the code of reputability of the class of one's belonging tells which objects are suitable for honorific consumption. In the language of behavioral economics today, where the consuming critic is located in the social status ladder defines a reference point from which emulation and avoidance takes place.

Long and close habituation makes the mind to unfold its apperceptive activity of perceiving beauty in certain directions. While the economic interest in the constitution of beauty of an object is focused on its efficiency in facilitating the material ends of life, the canons of beauty are circumvented to appreciate reputedly wasteful expenditure as well as to satisfy our sense of useful and beautiful so as to turn such canons into the sense of

novelty that perceives those things that combine ingenuity, pecuniary waste, and economic efficiency as novel (LC, 109-110). Veblen's evolutionary view of socio-cultural development thus draws on (a) the apperceptive activity of the mind, (b) long habituation of this activity in an invidious culture, and (c) formation of the sense of novelty through blending of the generic and the honorific beauty.

The serviceability of goods can no longer escape the impact of this sense. Because consumption is the most effective means for emulation in an invidious culture, consumable goods are now invested not only with the qualities to service the material ends of human life but also with the qualities that service the end of emulating social classes of higher statuses through demonstration of the ability to pay. The goods serving this end must show adequate marks of honorific waste beyond the brute efficiency. If consumers are habituated to look for the marks of honorific conspicuousness, producers of goods naturally direct their effort to meeting this demand. (LC, 112-113).

The effectiveness of goods as a means of emulation is no longer independent of a particular social context in which man makes his choices, for goods effective as such means under one culture are not as effective in another. Veblen is here breaking the conventional dichotomy between values/preferences and choice objects; how one values choice objects for their effectiveness as a means of invidious comparison is intimately bound to the social context in which such valuation is made, which is to say that preferences are convoluted with the facts of social and cultural styles of living to be emulated or avoided. One must see goods and know their features including how vogue they are across social classes before one can evaluate their serviceability and effectiveness as means of emulation.

The canon of taste for the honorific or the wasteful is so forcefully ingrained in the mind of the consumers that they make it their habit to look upon wasteful expensiveness as the measure of honorific decency and to degrade cheap things as dishonorable. So, any retrogression from the standard of living worthy in this respect is felt as a grievous violation of human dignity (LC, 112). But, the canon of taste for waste does not imply that the wasteful goods lack evidence of skillful workmanship or ingenuity; it is quite the contrary. Skillful workmanship or ingenuity is normally the ground on which to screen goods selectively for their honorific serviceability. In this sense, the canon of conspicuous waste works as a selective principle, rather than as a generative principle. Whenever innovative articles or methods are introduced, the canon

of conspicuous waste serves to select such forms as are suitable as effective means of invidious comparison (LC, 118). Veblen is clear on this point:

The position of machine products in the civilized scheme of consumption serves to point out the nature of the relation which subsists between the canon of conspicuous waste and the code of proprieties in consumption. Neither in matters of art and taste proper, nor as regards the current sense of the serviceability of goods, does this canon act as a principle of innovation or initiative. It does not go into the future as a creative principle which makes innovations and adds new items of consumption and new elements of costs. The principle in question is, in a certain sense, a negative rather than a positive law. It is a regulative rather than a creative principle. It very rarely initiates or originates any usage or custom directly. Its action is selective only. ... The law of conspicuous waste does not account for the origin of variations, but only for the persistence of such forms as are fit to survive under its dominance. It acts to conserve the fit, not to originate the acceptable. Its office is to prove all things and to hold fast that which is good for its purpose (LC, 118).

Veblen's thought that the canon of pecuniary waste is not a creative principle but rather a negative and regulative principle follows from his position that it is from the instinct of workmanship (man's taste for productive work and distaste for futile effort) that man's sense of beauty, art, proper conduct, and the propriety of consumption emerges through habituation of the sense of beauty over the course of cultural evolution. The canon of conspicuous waste, therefore, is a product (or an emerged pattern of tastes) rather than a cause of innovations. But, as this passage implies, Veblen suggests that the instinct of workmanship is the source of the two principles of cultural evolution, one positive and creative as the principle of innovation and production and the other negative and regulative as the principle of selection or surveillance. In fact, as wealth is sought and accumulated, society bifurcates into two classes, upper and lower, that cultivates different virtues, the class at the top cultivating the virtues of consumption through development of refined codes of decorum and the lower ones cultivating the virtues of innovation and production through development of arts and sciences. But, these virtues are rooted in the common aptitude called the instinct of workmanship. Thus, as men of lower stations create new and refined goods, men of higher stations evaluate and screen them for their serviceability to the life of honorific reputability, which is to be emulated across all rungs

of social status. What course the cultural evolution actually takes, therefore, depends on the intricate working of the two principles mediated by habits of thought. Veblen's theory in this respect is in close affinity with Adam Smith's theory, almost identical in structure.

Such is Veblen's theory of cultural evolution and the emergence of the leisure class and the canon of conspicuous waste. Starting with the instinct of workmanship, Veblen argues how this instinct, initially working out in an emulative or invidious comparison between persons, (1) habituates our apperceptive activity to perceive beauty and our tastes for invidious comparison through succeeding phases of cultural development, (2) contributes to a hierarchical differentiation of social classes, (3) brings forth the institution of private property to honor accumulation of wealth as a basis of esteem, (4) cultivates our sense of what is beautiful by blending the generic and the honorific beauty, thereby forming conjoined tastes for the brute efficiency and the honorific reputability, and (5) solidifies the canon of conspicuous waste as a selective principle that screens innovative goods and methods for the evidence of their honorific serviceability. Particularly important is Veblen's notion that through long habituation the canons of conspicuous waste traverse the canons of beauty to turn them into the sense of novelty which guides our discrimination of consuming articles for both ingenuity and pecuniary waste. It is a theory of the emergence, the evolution, and the institutionalization of the leisure class and the canon of conspicuous waste supporting it, but, more importantly, it is a dialectical theory of the instinct of workmanship and habituation setting in motion, under industrial growth, an evolutionary process of a cultural development, in which man's quest for invidious comparison and social esteem is just as important as the attainment of impartial well-being. It is also an evolutionary theory of the genesis of dispositions in the individual self, or a dynamic theory of the internalization of the norm of the canon of conspicuous waste into the motivational structure of the self through habituation. Veblen's theory brings to light that the conventional economic theory, whose premise is that preferences are given, is incomplete as an account of human behavior in a socio-cultural context in which the proclivity to gain in social status and esteem incessantly seeks and finds its new expression through access to novel routes to pecuniary reputability. Moreover, Veblen's theory provides an excellent example of the general proposition that the linkage between actions of individual persons under cultural influences and the emergence of cultural patterns cannot be understood fully without analyzing how tastes or the

sense of beauty are shaped by cultural norms and how such norms are reproduced dynamically through voluntary actions of individuals.

In the eyes of Parsons' dynamic theorem of sociology (to be taken up shortly), one can think of Veblen's theory as an evolutionary theory of institutionalization of dispositions and the resulting expressive behavior, in which industrial growth plays a critical role of turning out innovative goods and methods for invidious comparison. With the permeation of the invidious culture, the class at the top sets the standards to be emulated by the lower classes, with varying attitudes toward work and frugality. Once such standards are assimilated throughout society, different standards are created and set by the highest class again, thereby setting in motion an endless process of emulation and avoidance. In Parsons' terms, the common normative values in Veblen's theory are the values of status-seeking emulation for the purpose of invidious comparison and demonstration. In order for such values to acquire a motivational force, they must be introjected into the motivational structure of an individual; in this way, emulation becomes an ego-ideal, a fusion of one's desire and a moral force of being legitimated in the evaluative judgment of other people. It is this institutionalization of the normative value of emulation that brings forth an integration of a social system through a network of roles and statuses.

We next turn to Bourdieu, whose logic of practice and distinction is closely related to the theories of Adam Smith and Veblen. First, we review this logic, which will be followed by his theory of distinction and lifestyles.

Bourdieu's Logic of Practice and Habitus

In *Logic of Practice* (1990) (hereafter LP), Bourdieu proposes a theory of practice as practice, which has its position between two polar opposites: objective idealism (or what may be called positivist materialism) on the one pole, which essentially views the social relationships as objective relationships that can be obtained and ordered in the form of knowledge of the objective structure, and subjectivism, on the other pole, which consists in abstaining from any account of the social world from the viewpoint of objective necessity. Bourdieu insists that the objects of knowledge are not passively recorded but rather actively constructed under the principle of construction he named the habitus, which is a durable system of structured as well as structuring dispositions (LP, 52). Veblen turned to the habituation of the apperception of beauty and

of tastes for invidious comparison in the formation of the canon of honorific waste and the sense of novelty, and Adam Smith also held that the habit and custom play an important role in shaping the sense for agreeable, appropriate, and beautiful things. In Bourdieu, the site at which man's activities unfold as habituated activities is now captured by the notion of dispositions that structure the environing world with their own structure.

According to Bourdieu, building a theory of practice calls for returning to the very site, the habitus, where the dialectic of practice, "the dialectic of the *opus operantum* and the *modus operandi*" takes place (LP, 52). With this stance, Bourdieu defines the habitus as systems of durable and transposable dispositions that are predisposed to function as structuring structures for practices as well as for representations without any conscious effort at aiming them, and which can act as a system of cognitive and motivating structures in the constitution of the practical world as the world of a pre-realized or pre-conditioned ends and means, all borne of a particular set of conditions of existence. Habitus is, therefore, a familiar site inculcated by what the objective conditions hold in terms of the probabilities, impossibilities, freedoms, necessities, opportunities, and prohibitions. It is a virtue created by internalizing the external conditions, hence becomes the source of the principle of the continuity and regularity in the social world. (LP, 53-54). Bourdieu is, therefore, critical of the dichotomy on which the neoclassical economics is based, namely, the separation between external constraining conditions and the preferences that are internally born. For him, this principle of continuity and regularity must find its source ultimately in the habitus-dispositions, a systematic site which mirrors the external conditions of existence.

The habitus is not limited to the logic of practice on the plane of everyday choices. It also works as the generative source of thinking, perceiving, and acting in particular social and historical conditions of its production. Thus, the habitus is an embodied, internalized, but forgotten history of past practices, a spontaneity in the unconscious, which forgets history while its objective structures leave their imprints in the quasi-natures of habitus. It is spontaneity without consciousness or will (LP, 56). Bourdieu states this in strong terms:

Thus the dualistic vision that recognizes only the self-transparent act of consciousness or the externally determined thing has to give to the real logic of action, which brings together two objectifications of history, objectification in bodies and objectification in institutions or, which amounts to the same things, two states of capital,

objectified and incorporated, through which a distance is set up from necessity and its urgencies. This logic is seen in paradigmatic form in the dialectic of expressive dispositions and instituted means of expression (morphological, syntactic and lexical instruments, literary genres, etc.) which is observed in the intentionless investition of regulated improvisation (LP, 56-57).

Thus, habitus is of critical important to the working of an institution including an economy, which requires that it be durably objectified in the logic as well as in bodies so as to recognize and comply with the demands placed on practices voluntarily (LP, 57-58).

The habitus is also a source of a common-sense world through formation of consensus on the meaning of practices and the world. Practices within the habitus, therefore, are objectively harmonized and mutually adjusted without any conscious reference to a norm or explicit coordination. Similar conditions of existence produce homogenous class habitus, which harmonizes practices with little conscious coordination (LP, 58-59). On collective action, however, Bourdieu warns against conceiving such action by drawing an analogy with individual action of its own autonomous logic of mobilization. The relationship between class habitus and individual habitus is distinguished by separating the non-individualized (identical, impersonal, and interchangeable) part of internalized subjective structures from the singularity of the trajectories of individual dispositions, and this relationship is characterized as one of homology (diversity within homogeneity) in which the systems of dispositions of individuals who belong to the same class are viewed as structural variants to one another (LP, 60). This distinction becomes important when the society is divided into different social classes whose members share similar dispositions for liking and disliking as well as for doing and not doing *vis-à-vis* an environing world of their own construction.

How stable is habitus then? Individual dispositions owe their singularity to the sequence of irreducible past experiences, and such dispositions are subjected to the dialectic between the constancy and stability as new experiences are sought, which necessarily brings new information that threatens its stability. Nonetheless, if this dialectic is dominated by earlier and accumulated experiences, the defense mechanism may reject information that threatens the stability and avoids further exposure to such information. But, for this mechanism to work, habitus needs information to tell which information is to be avoided for its stability. If the class distinctions or the life-styles of different classes are defined by privation relative to what other classes have,

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it inevitably follows that the habitus belonging to a given class must be aware of what it does not have, which implies that the class must possess information that could threaten its constancy. As Bourdieu focuses on the self-fulfilling nature of the habitus, the problem of this paradox about the unchosen principle of all choices is solved by saying that the avoidance strategies or, more fundamentally, the underlying schemes of perception are an unwilling non-conscious product borne by the conditions of existence. But, to the extent any class consciousness must be aware how the class of one's belonging differs from other classes, Bourdieu's habitus begs a difficult question as to how information from various sources is assessed in the mind of an individual. In comparison, in Veblen and Adam Smith, class divisions and class consciousness, which are a product of cultural evolution, are the conditions of invidious comparison, whether for the purpose of winning the applaud of others or for the purpose of emulating higher classes under the canon of conspicuous waste. In this respect, Bourdieu's theory of habitus could be viewed as the 'closing' principle that generates classes and their symbolic distinctions, rather than the 'opening' principle that extends the socio-economic order through innovative activities of mankind (LP, 60-61).

The self-fulfilling nature of habitus is emphasized still more by denying that the strategies of agents endowed with a habitus are oriented to their own consequences because they are themselves determined by the outcome of interchangeable past practices coinciding with their own under a structure homologous to the objective one. Bourdieu is, therefore, critical of the teleological description of rational agents interacting under perfect information of each other's preferences and competencies and of any description of the reactions of interacting agents as mechanistic responses. According to him, the objectively organized strategies or practices that one employs are not the product of genuine strategic intention that scans the space for all possible moves; they are rather the product of the habitus, a particular durable relationship among the possible things between dispositions and the objective conditions. The fact that such strategies have the appearance of being determined by anticipation of their consequences owes decisively to the fact that they are part of the practices that are preadapted to the objective conditions in which they are used so that the past is always present in them. When this adaption is perfect, it gives "the most complete illusion of finality," or "self-regulating mechanism" (LP, 61-62).

Bourdieu relates the practices borne of habitus to Max Weber's distinction (1922, 1968) between a pure model of rational action under complete knowledge of circumstances and intentions and an anthropological description of practices for the reason that practices depend on specific chances that are appropriated by capital that an actor possesses. As Weber holds that the pure model of rational action cannot be regarded as an anthropological description of practice because real agents seldom possess the complete information and the skill to appreciate it, Bourdieu takes a similar stand by holding that practices depend not on the average chances of profit, which is an abstract and unreal notion, but on the specific chances that a singular agent or a class of agents possesses by virtue of its capital as a means of appropriation of the chances theoretically available to all. Thus, Bourdieu is critical of economic theory which acknowledges only the rational responses of a universal agent to potential opportunities expressed in average chances, for the reason that such a practice converts the immanent law of the economy into the norm of proper behavior. He emphasizes that the rational habitus or rational dispositions themselves can only be acquired under certain social conditions as a product of particular economic conditions defined by economic and cultural capital. The art of estimation, anticipation, or risk taking on the possible against the probable is made possible by the dispositions acquired in social conditions (LP, 63-64). Bourdieu's criticism and Weber's distinction are important when we try to make sense out of choices made by agents who are subject to all sorts of limiting conditions consciously or unconsciously. But, if the notion of rationality is lifted from the stringent requirements that Weber had in mind, it can be turned into a more formal concept relating only to the fact that one chooses what one prefers most or is predisposed to like most from any feasible set of alternatives whether preferences are determined by habitus or idiosyncratic. In this paper, we will attempt to formalize this abstract notion of rationality to show that human choice behavior can be characterized as rational behavior that selects the best choice from any set of alternatives, however this set may be constrained and whatever profits are sought by this selection, idiosyncratic utility or symbolic profits with respect to cultural symbolism.

Furthermore, on the pre-emptive rights on the future, Bourdieu holds that such rights cannot be appropriated without the projection of the power relations that are present; according to him, they are the power relations of the present projected into the future through appropriate chances, from which dispositions at the present are

governed. This is how Bourdieu sees the teleology of human actions under habitus. What he sees is the relationship between the habitus and the state of the chances offered in the social world, which is dictated by a relation to power. In this sense, habitus is 'the principle of a selective perception of the indices' for confirmation and reinforcement of itself; it, therefore, makes itself an accomplice by reading in the future what is probable in its social space and thereby brings about what it can effectively anticipate. In Bourdieu's view, the habitus is not a creative principle that transforms itself by going beyond the probable since it is already restrained by its social conditions, but rather a self-fulfilling or self-confirming principle that mediates the relationship between the habitus (with its temporal structure and disposition) and what the social world holds objectively, while the patterns of responses are preadapted to the objective conditions that are homologous to the already familiar conditions of its production. It serves, therefore, as a selective principle that confirms and reinforces its effective demand, not as a creative principle (LP, 64-65).

Bourdieu's Theory of Distinction and Life-Styles

In *Distinction* (1984) (hereafter D), Bourdieu turns to the implications of the logic of practice for distinction and life-styles. He first affirms the legitimacy of an institutional approach to sociological investigations of the social space, by asserting that the question of what the social space is should be raised within this space itself. This social space is then structured by a generative principle called the habitus, whose systematicity and transportability is assured by the fact that it is both a structuring structure (*modus operandi*) and a structured structure (*opus operatum*), and that the internalization of the habitus in the mind of agents becomes the source of life-styles supported by a distribution of symbolic capital and power in the social space. Thus, Bourdieu's notion of habitus contains, in a complementary manner, both the meaning-giving acts of agents living in it and a coherent complex of the products of such acts. In the language of Bourdieu's theory, Veblen's habituated mind that sees the enviroing world in a certain way can be thought of as a structuring structure, and his notion of habituated canons of invidious pecuniary comparison (his selective principle that has resulted from the instinct of workmanship through a long history of habituation and evolution, and which operates on the space of the symbolic products that meet the tastes for invidious comparison) can be regarded as a structured

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structure. Likewise, Adam Smith's notion of the mind that is habituated to see the enviroing system as a harmonious movement and to act on the moral sentiments for approbation and disapprobation can be thought of as a structuring structure, and the space of those differentiated articles, both of ordinary usage and of those of elegant contrivances, that satisfy our quest for approbation, can be thought of as a structured structure. Adam Smith's human folly of toiling for more wealth and better contrivances resonates with Bourdieu's notion that the experiences in the social world belong to a misrecognized order of this world.

The habitus then becomes the source of life-styles for agents therein, by engendering systematic configurations of properties that are differentiated by differential deviations. But, the life-styles as the products of the habitus are recognition of an order only in the mind; they are, therefore, socially qualified sign systems, not an objective truth. This is an important point as it rejects any notion of the spontaneous generation of class consciousness. For Bourdieu, the dialectic between the conditions of existence and habitus takes place through life-styles and a distribution of symbolic capital in the plane of perceived differences established in the mind of agents, while the practices and products of agents of the same class preserve the objectivity of the habitus without any conscious effort at orchestration (D, 172-173).

If the mind of agents is structured by habitus and if life-styles are the products structured by the habitus, what preserves the two in their structuring-structured relationships, or what mediates such relationships? The answer lies in the taste for life-styles. Bourdieu explains how taste serves as the generative formula of life-styles and why taste is so pervasive in the social space. In his view, taste is an operator of mapping from the universe of objects more or less continuously distributed to the universe of symbolic expressions of life-style, that is, from an order of physical bodies to an order of symbolic distinctions. Taste in this sense reflects the *opus operatum* of the habitus. It is, moreover, an operator of mapping from the universe of objectively classified practices into the universe of classifying practices of symbolic expression. Taste in the latter sense mediates the *modus operandi* of the habitus as a systematic expression of the condition of existence which constitutes a life-style (D, 174-175). This is Bourdieu's way of characterizing taste. Taste as an operator and as a product also constitutes an essential part of Adam Smith's and Veblen's view of socio-economic evolution.

He then holds that this system of a life-style, the product of internalization of the structure of social space, is the transformer of

the necessity into the virtue of making appropriate choices that constitute it. For Bourdieu, therefore, preferences of an agent do not exist independently of the conditions of his or her existence. Choices and the regularities within the limits of economic feasibility are transformed into self-fulfilling preferences. This view of the non-mechanical relationship between the necessity and the virtue of the choices induced is central to his position that the social space is reproduced from within itself through the medium of life-styles and tastes (D, 175).

Bourdieu also claims that the generative schemes of the habitus applies universally across all dissimilar practices and goods of different classes, because the principles of oppositions and correlations constituting different systems of life-styles are homologous to one another. The extensiveness of this homology derives from the fact that such systems are homologous in structure to the objective oppositions between class conditions. He then shows how the two principles or axes, economic capital and cultural capital, organize the universe of life-styles and govern the space of cultural consumption. That is, the dispositions and induced practices of different classes are differentiated by the opposition dictated by the extent to which economic and cultural capital are appropriated; the rich have both capital and the poor lack both. This two-way organization of the social space by the composition of economic and cultural capital brings to focus the differences in tastes of those who belong to the same income bracket but differ in the cultural capital they possess. Economic variables, therefore, are necessary, because they measure the distance from or the proximity to the necessity and the degree of freedom from the material constraint, but not sufficient to account for the human proclivities which look for symbolic profits of cultural consumption (D, 175-177). And, the taste of necessity forms the basis of a life-style only by the relationship of privation *vis-à-vis* other life-styles. In this sense, a life-style as a classificatory system can be as such only if it is defined by what it lacks, not by what it has (D, 178-179).

Thus, Bourdieu characterizes (1) taste as a certain acquired disposition and a practical mastery of certain distributions, (2) the schemes of the habitus as the primary source of classificatory schemes working below the level of consciousness and language, and (3) the social agents as producers of both classifiable acts and acts of classification which are themselves classified. Knowledge of the social world has to take into account a practical knowledge of this world which preexists and which it must not fail to include in its object, although this knowledge has to be constituted against

the partial and interested representations provided by practical knowledge (D, 466-467). Bourdieu reiterates that the knowledge of the social world is an act of construction through a system of internalized embodied schemes or social structures based on the principles of division common to all agents, and that such divisions are revealed in the network of common place oppositions that find their source in the opposition between the dominant and the dominated. In his view, the social order of the opposition and divisions becomes inscribed as principles in people's minds in constituting the image of the social world through the differentiated and differentiating conditionings that are associated with the conditions of existence (D, 471). What is important about such conditionings is that experiencing objective limits gives rise to a sense of limits or exclusion in the mind of people from what is beyond their appropriation. There is thus a correspondence between the real world (social structures of real divisions) and the thought world (the mental structures of the practical principles of division), and, in consequence, the relations of order that run through them inseparably are accepted as self-evident structures of the social world and become embodied in people's schemes of cognition (miscognition). This is the origin of the logical conformity (Durkheim, 1915, p.17). It is this conformity that "makes it possible to act as if one knew the structure of the social world, one's place within it and the distances that need to be kept" (D, 472).

This logical conformity and the conservation of the social order need to be scrutinized carefully in the light of the Husserlian distinction between the static and genetic phenomenology, particularly with respect to whether the social world, constructed in the mind of people, is finitely closed or infinitely open. If the construction of the social world is a mental phenomenon that fulfills itself through a synthesis of single and particular forms of intentional mental process, it gives rise to a higher level consciousness that sees this construction just as another construction and leaves a gap to be filled by a dynamic or genetic phenomenology in which "I" as the subject transcends itself (Husserl, 1927). Bourdieu focuses on the logic of practice of the habitus, with more emphasis on the static than dynamic aspect (although the notion of life-styles as privation indicates otherwise), while Veblen and Adam Smith start with certain principles, the instinct of workmanship or the moral sentiments of approbation, that drives the evolution of the socio-economic order; hence, their theories are more focused on the dynamic generation and extension of this order.

We next turn to Parsons' theory of social actions and social systems, which identifies all essential elements required for a collection of individual agents to be integrated as a social system. After this reviewing, we will place the theories of Adam Smith, Veblen, and Bourdieu in perspective in relation to one another, using Parsons's theory as a reference framework.

Parsons' Vision of Social Actions and Social Systems as an Integrated System

In *The Social Systems* (SS hereafter), Parsons addresses the fundamental question of how actions of individuals as an action system and society as a social system become integrated as a personality-culture relationship that constitutes a stable order. According to Parsons, an action system of individual agents is an integrated system of motivational and cultural elements, and a social system is a structure of roles and statuses that functionally integrates social actions of individual agents. If the problem of the double contingency of actions of ego and alter is unavoidable, it follows that complementary expectations of their actions are required in integrating social actions of individuals and sustaining social order. Such expectations are possible only if the need for order is met in two dimensions, one in the dimension of symbolic systems that make communication possible and the other in the dimension of the mutuality of motivational orientation to the normative aspect of expectations in order to avoid the Hobbesian disorder. Order in the latter dimension is possible only if two further conditions are met; (1) individuals are oriented to common normative cultural standards under appropriate sanctions, and (2) actor's motivation is integrated with such standards at the level of the personality. This integration is made possible only if common normative values are internalized into the motivational structure of individual actors, and, in addition, only if this internalization is mediated by the socially learned sentiments or value-attitudes, which constitute the need-disposition of the personality. When conformity to a value-orientation standard fulfills the need-disposition of an actor and optimizes the reactions of other actors, the normative standards are said to be institutionalized.

With this institutionalization, the conformity-deviation dimension of an actor acquires the gratification-deprivation dimension. The conformity to role-expectations becomes an ego-ideal for an actor, with the moral responsibilities that it entails. The core dynamics of social systems consists in integrating common normative values with the internalized need-disposition of the

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constituent personalities. Hence, the fundamental dynamic theorem of sociology concerns how the degree of this integration affects the stability of a social system. For Parsons, this theorem is the point of reference for all dynamic analyses of social process (SS, 42). With this characterization of social systems and social actions, the phenomena of institutionalized common normative values and institutionalized behavior become the central concern of sociology, which explores schemes that go beyond rational instrumental goal-orientation. Parsons says:

This integration of a set of common value patterns with the internalized need-disposition structure of the constituent personalities is the core phenomenon of the dynamics of social systems. That the stability of any social system except the most evanescent interaction process is dependent on a degree of such integration may be said to be the fundamental dynamic theorem of sociology. It is the major point of reference for all analysis which may claim to be a dynamic analysis of social process.

It is the significance of institutional integration in this sense which lies at the basis of the place of specifically sociological theory in the sciences of action and the reasons why economic theory and other versions of the conceptual schemes which give predominance to rational instrumental goal-orientation cannot provide an adequate model for the dynamic analysis of the social system in general terms. (SS, 42)

.....
The theory of institutional behavior, which is essentially sociological theory, is precisely of the highest significance in social science because by setting the problems of social dynamics in a context of institutional structure and drawing the implications of the theorem of institutional integration which has just been stated, this theory is enabled to exploit and extend the knowledge of modern psychology about the non- and irrational aspects of motivation in order to analyze social processes. It follows also that any conceptual scheme which utilizes only the motivational elements of rational instrumental goal-orientation can be an adequate theory only of certain relatively specialized processes within the framework of an institutionally structured social system. (SS, 43)

Thus, Parsons' view of society and individual actions is one of integration, between norms on the one hand and the internalized need-dispositions of individuals on the other. Because social and cultural values are introjected into the personality of actors as need-dispositions, the conformity-deviation tends to coincide with the gratification-deprivation, thereby making it possible for both

society and individual actions to be integrated. That is, social and cultural values are reflected in the mirror image of need-dispositions of individuals with the conformity-deviation constantly correcting this image through gratification-deprivation. For institutionalized action there is no dichotomy between preferences/values of individuals and the social system in which their actions take place. Thus, this intimacy between social and cultural values and need-dispositions (or preferences/values) of individuals marks, for Parsons, a complete departure from economics whose fundamental methodology is founded on rational instrumental goal-orientation.

With this paradigm of institutionalization comes one of the central questions that Parsons addressed, which concerns a mechanism through which a commonly shared system of symbols can be integrated into the personality structure of the actor. Parsons held that the action systems of individual actors has three foci of integration: (1) the individual actor, (2) the interactive system, and (3) a system of cultural patterning. For this integration, the psychoanalytic structure of the personality and the social system have to be integrated, which implies that sociological analysis of social systems and psychoanalysis of the personality have to converge around some unifying conceptual scheme that binds the personality structure with the social system. Parsons (1952) developed one of such schemes through his critique of Durkheim's insight on the internalization of moral values and the limitation of Freud's notion of superego. Freud's superego is a psychological instrument by which moral values of society are introjected into the personality structure. It is a mechanism by which the regulative or the moral aspect of a common culture is transmitted to the personality structure so that it contributes to the maintenance of the stability of a social system under a generalized system of symbols. On the other hand, in Durkheim's view (1893), society is a symbolic system of moral norms that guide behavior of individual actors, in which such norms function as the regulator of social behavior through creation of moral authority and moral values, so that society binds itself not by external coercion but by internalization of moral norms. If internalized moral values are what sustains society over time, and if Freud's superego is a mechanism by which moral norms or values are internalized into the personality structure of constituent members of society, society has in its hand a mechanism of self-sustaining. In this respect, Freud's postulation of superego and Durkheim's view of society as a coherent whole united by the presence of moral norms converge on one point that there is a personality-mediated mechanism to

internalize moral values that contributes crucially to the creation and the sustenance of society without external coercion.^{iv}

Because society is a system of interacting individuals with cognitive, cathectic, and evaluative orientations, and because culture is a system of generalized symbols and their meanings (containing the cognitive reference system, the system of expressive symbolism, and the system of moral standards) that mediate the cognitive, emotional, and evaluative components of this interaction, Parsons holds that the superego, as the moral regulator of emotional reactions against actions of others, cannot be isolated from how society is organized in these three aspects. Under this view, Freud's notion of the superego suggests that internalization of the crucial characteristics of society into the personality structure takes place on a much wider scale; that is, what is morally restraining must be learned through social interaction guided by a cultural symbolism. In order for this symbolism to be internalized into the personal structure, the individual needs to achieve an affective organization of a high order by building up emotional attachments to other persons and developing the sensitivity to their attitudes through social interactions. Such an emotional organization is made possible only through acquisition of a cultural symbolism.

Thus, Parsons replaces Freud's id-superego-ego structure with a more integrated one. Freud's structure is based on the dichotomy of the external reality to which the person tries to adapt, first with the id being the source of incessant impulses and instincts, second with the ego having many defense mechanisms, and third with the superego being the moral and punitive regulator. There, the superego is viewed to internalize the moral values of society into the personality structure. Parsons, on the other hand, holds that all three components of culture (the cognitive, cathectic, and evaluative components) are internalized into the ego structure of the individual actor. Freud's impulse-repression model with ego-functions having defense mechanisms is replaced by Parsons with a model of a socialized actor whose values and need-dispositions are a result of socialization under a system of cultural symbols in all three dimensions: cognition, cathexis, and evaluation. Once the individual actor becomes socialized to such an extent, the personal structure and the cultural environment cannot be separated from each other. The culture consists of (1) cognitive reference system, (2) expressive-affective symbolism, and (3) common moral standards. The symbolic elements of these are then internalized into the personality of the actor, whose ego has, internalized into it, (1) self-object images, (2) superego, and (3) symbolically

organized affect. Between individual actors, there are then (1) mutual cognitive orientation and evaluative appraisal, based on internalized self-object images, and (2) mutual cathexis and evaluative appraisal, based on symbolically organized affect. With such internalization of culture, the individual actor's motivations/need-dispositions become integrated with it. This is Parsons' socialized conception of man and of the society-personality relationship expounded in Parsons (1952). It is a conception of *homo socius* as institutionalized man, in which internalization of the symbolic elements of culture in the personality structure takes place on a scale wider than what was imagined by Freud.

Parsons' theory of institutionalization explains why it is not legitimate to hold a dichotomous view that splits the motivational structure of an individual actor and the socio-cultural elements. Interacting actors have cognitive, cathetic, and evaluative orientations. Just as anything expressed verbally is mediated by a shared language (an expressive symbolism with its logic, which is socially acquired), an action in a social system is an expression in reference to: some cognitive system (which includes knowledge and reasoning we share), some shared expressive-affective symbolism (which confers symbolic meanings), and a set of common moral and evaluative standards (along with positive sanctions for conformity and negative sanctions for deviation). For this reason, an action in a social system becomes interpretable in a socially meaningful way. Consumption as an act is no exception. It is an act of expressing one's need-disposition in reference to: (1) a shared expressive symbolism (which makes it possible to send a symbolic message to other spectators, therefore becomes the source of symbolic profits), (2) the cognitive knowledge we share about choice objects, and (3) common moral and evaluative standards (which legitimate and screen what we consume in the light of what is socially acceptable or valuable as a means of social status emulation along with symbolic profits it entails). Consumption, therefore, brings about a harmony between the dimensions of conformity-deviation and gratification-deprivation. Thus, in a broader picture of culture, a system of preferences of each individual consumer is a convoluted preference-value system, convoluted in the sense that it cannot be determined independently of the facts of the social space, valued in the sense that it absorbs the essential elements of culture in orienting itself.

Parsons' theory of socialization and institutionalization provides an excellent framework in which to place the theories of Adam Smith, Veblen, and Bourdieu in perspective, in relation to

one another. We now turn to the generative principles of these theories from the Parsonian perspective, that account for the way our society/economy produces its order as an institutionalized system.

Adam Smith, Veblen, and Bourdieu in Relation to One Another from the Parsonian Perspective

Apart from many of the criticisms against the over-socialized view of man (e.g., [Wrong, 1961](#)), Parsons' theory provides a useful theoretical framework by which to place human actions (including human behavior) in a social system in perspective. Parsons views an individual actor as an integrated structure of motivational and cultural elements, and a whole culture as comprised of three systems: belief systems, systems of expressive symbolism, and systems of evaluative standards, the last of which, constituting a system of values, is integrated into an action system and serves as selective criteria for screening actions. In a social system, cultural value patterns (common normative values) are internalized into the motivational structure of an individual actor along with positive sanctions for conformity thereto and negative sanctions for deviation there from. This internalization is mediated by value-attitudes or sentiments which become the need-dispositions of the personality. In this way, the ego-ideal (what one desires to accomplish) becomes integrated with the superego (the moral responsibilities), along with the sense of self-respect, adequacy, and security. Thus, for Parsons, this integration of common value patterns with the need-dispositions of individuals through internalization is essential to social systems, and the stability of such systems depends crucially on the extent of this integration.

In Veblen's theory, the instinct of workmanship, through succeeding phases of cultural evolution, constantly shapes and motivates our desire for invidious comparison, whether through an emulative demonstration of force in the primitive phase, or through acquisition by war and seizure in the predatory phase, or through accumulation of wealth in the quasi-peaceable phase. Out of these phases emerges the life of leisure as the most definitive evidence of pecuniary achievement and reputability, with exemption from productive work taking over accumulation of wealth as a measure of social standing. The leisure class brings with it refined codes of decorum on all walks of life and other vicarious means for the demonstration of the life of leisure. Conspicuous leisure and

conspicuous consumption thus become social norms for members of the leisure class. The leisure class also brings with it a hierarchical differentiation of social classes, where lower classes emulate, as an ideal, the norms set by the leisure class at the top. The canon of conspicuous waste for invidious comparison traverses the aesthetic sense of what is useful and beautiful and cultivate our tastes for novelty by blending the beautiful and the honorific in the apperceptive activities of the mind. Such tastes tend to admire those goods that combine beauty, workmanship, and honorific reputability, thereby serving as a selective principle that screens goods according to such combined effects. This selective principle is a derived principle from the instinct of workmanship (which is an acquired aptitude to prefer what is effective and avoid the futile) through habituation of our tastes. The derived desire for noble goods motivates producers to turn out innovative goods. The instinct of workmanship serves as a generative principle of such innovations through the virtues of production and innovation cultivated by people of the lower classes. Thus, the two principles are set in motion in tandem, one generative (of innovation) and the other selective (of consumption). These two principles interact in determining the course of cultural evolution. Veblen's theory is a theory that explains why and how the society bifurcates into the upper and lower classes which cultivate the virtues of consumption and innovation separately, yet complement each other through creation of an invidious culture that requires production of refined goods that are acquired by the class at the top to set a standard to be emulated by the lower classes.

Indeed, Veblen's invidious culture has its own organization of (1) a cognitive reference system, (2) a system of expressive-affective symbolism, and (3) a system of moral standards. Expressive-affective symbolism permeates the entire society with signs of achievement and success as represented by consumption of the leisure class that adheres to refined codes of decorum. It has its way of cognizing and screening objects, in reference to the goal of upper status identification, as well as a system of moral standards pertaining to the institutions that protect the ownership of property and wealth as well as the rules of conduct that are consistent with virtues of production and consumption. The esthetic sense of nobility pervades the entire spectrum of human activities in this culture, and moral standards are no exception. There is a shared belief that the life of leisure is honorable, noble, and reputable, hence is something to be emulated, and that demonstration of success by emulating it (using right signs) is accepted as such by others. Emulation, therefore, collects a moral

force of an ego-ideal. Thus, individual agents' orientations (in believing and cognizing objects, in seeking what is pleasing, and in knowing how to evaluate objects as well as acts) are met by this culture. Veblen's invidious culture is indeed a system composed of systems of cognition and beliefs, expressive symbolism, and moral standards.

Order of society of such culture is sustained on two premises: (1) individuals are oriented toward the common normative standard of emulating consumption and codes of decorum of higher statuses, and (2) individuals' motivation is integrated with this standard. Agents living under the culture acquire, socially, certain sentiments or value-attitudes that favor invidious comparison. Such sentiments constitute the need-dispositions of individual agents. That is, in an invidious culture, it is a need for individuals to acquire positive sentiments toward emulation. Thus, acting in conformity to such emulation is not only pleasing to the sentiments, but also optimizes the reactions of others since they share similar sentiments and a similar standard of emulation. Thus, the normative value of emulation is institutionalized in an invidious culture, and, as such, drives the social evolution.

Like Veblen's, Adam Smith's theory has two complementary elements, man's appreciation of workmanship in refined articles on the one hand and our moral sentiments of approbation and disapprobation, which dispose men to desire refined articles for the sake of getting applaud from the spectator, on the other. Such sentiments are habituated to admire the rich and despise the poor, and they constitute our desire to emulate the rich by acquiring those articles enjoyed by the wealthy. Because these sentiments are universal, superior stations of life set the standard of consumption to be emulated by men of lower stations of life. Custom and fashion of different ages and nations, by habituating the judgments of beauty (the apperceptive activity of beauty in Veblen), affect the moral sentiments of approbation and disapprobation, but their influences are limited to the propriety and impropriety of particular usages of such sentiments (particular passions and particular rules of decorum), never to their general character. Our moral character is compromised, but our moral sentiments never wane.

In Parsons' terms, the cultural (moral) values of emulating the rich and avoiding the poor are internalized into the motivational structure of the personality, and this internalized dispositions share the moral sentiments of approbation toward the rich and of disapprobation toward the poor as well as the moral ideal of seeking wealth. It may be said that the moral approbation-disapprobation dimension of an individual coincides with the

favorable-unfavorable or the gratification-depravation dimension in Parsons' language. For Adam Smith, this is all part of a deception that constantly renews the industry and ambition of mankind. A society with such moral sentiments has a conjoined force of innovation and emulation that mediates economic growth and expansion of employment through class differentiation and division of labor. In this sense, the theory of Adam Smith is a theory of reinforcing dynamics of (1) man's ability to appreciate workmanship and (2) the moral sentiments of approbation and disapprobation, which turns the society into an invidious culture in which acquisition and demonstration of refined articles of the upper stations of life is believed to be applauded by the spectator. Again, individual agents' orientations (how to cognize and what to believe, where to place emotional energy, and how to evaluate anything) are met by the cognitive-belief system, the evaluative system, and the moral standards that emerge spontaneously as a norm. These systems and standards are not the givens, but rather they emerge through cultural evolution. Of course, this is also true with Veblen.

Adam Smith's concern is focused on how a socio-economic system becomes organized as an order that keeps expanding with all aspects of human existence integrated. Tastes and aesthetic sense of beauty, nobility, and propriety, dispositions, judgments, virtues of production and innovation, arts and sciences, man's ambition and industry, organization of industry and employment, moral conducts, and any other aspect do not go their own way as disconnected things. They are different expressions or aspects of a grand harmonious order based on two principles; (1) moral sentiments for approbation, and (2) moral faculties. The latter is necessary to keep society from crumbling into nothing. Observance of the general rules of morality is supported by the strongest motives of self-interest, which includes both self-regarding and other-regarding. In fact, one without the other is destructive of its foundation (MS, 241). Thus, Adam Smith argues that our natural power of perception, our moral faculties, and our strongest motives of self-interest will, through experience, be able to grasp moral rules by which to guide our conduct in whatever circumstances we find ourselves, and that these rules keep the human existence in harmony with the entire system. Individual agents, through their spontaneous activities and interaction, develop knowledge, learn to use good judgments in evaluating things, and form moral standards. What comes out of this interaction constitutes the essential components of society as a system. But, a grand order is a deception, not an objective order,

created out of our own sentiments to be regarded well by others and the habituation of what we perceive as good and beautiful. Both Adam Smith and Veblen point to the dynamic evolution of a social system perpetuated by the generative principle, whether this principle is the workmanship or moral sentiments, and what comes to pass through this evolution is a product of the apperceptive activities of mankind mediated by habituation.

Bourdieu shares much with Adam Smith and Veblen. Bourdieu's fundamental question focuses on how the social space is constructed actively in the mind of individuals, with all its differentiation captured from otherwise undifferentiated continuity and uniformity, and attempts to answer this question, not by an intellectual operation of a third person, but from within the space itself. Bourdieu's notion of habitus is, therefore, the self-fulfilling or self-generating principle, and is defined both as a structuring structure and a structured structure. It is the necessity of one's position in the social space turned into a systematic and transposable disposition that generates practices and perceptions that are socially meaningful. The social space is then filled with life-styles as socially qualified sign systems based on a distribution of symbolic capital and power, all in the mind of the constituent individuals. This habitus is then preserved by tastes, which are a coherent set of preferences in the logic of sign systems, or, more generally, an operator of mapping from the space of neutral objects or physical bodies into the space of symbolic distinctions. It is such tastes that turn the necessity of one's existence in the social space into the virtue of making choices. In a social space, economic and cultural capital are appropriated to different degrees in different classes. Such capital determines the distance and the proximity of life-styles, and the rich and the poor develop the tastes of luxury and necessity, respectively. Habitus, through such bifurcation based on economic and cultural capital, reproduces the social space from within, and structures the mind with the logic of socially meaningful symbolic distinctions and practices. In Parsons' language, the habitus is the need-disposition which internalizes normative values or a logic of sign systems appropriate to a social class that one belongs, which is sustained by turning the economic necessity into the virtue of making appropriate choices. While Parsons identifies the institutionalization of common normative values as a necessary condition of a stable social system, Bourdieu identifies the habitus as the generative principle of this system, not as an objective operation but as a creative operation that turns the external into a durable disposition that constructs a meaningful social space from within. It is also a creative operation by which

the institution of the economy becomes fully viable, although the way the economy works out its order is not brought to light fully in his theory.

In the language of Bourdieu's theory, the expression of Veblen's instinct of workmanship (his primary generative principle) as a positive principle of innovation and production and the habituated tastes for invidious comparison as a selective principle of consumption can be thought of as being both a structuring structure (that carries within it appropriate motivation and a system of symbolic signs) and a structured structure (with cultivated virtues and logic of practice and distinction). Likewise, Adam Smith's notion of the dispositions guided by tastes for the reputability can be interpreted in a similar way. And, the symbolic space of those differentiated articles (of elegant contrivance and of ordinary usage) can be thought of as a structured structure that makes cultural consumption possible. Adam Smith's human folly of toiling for more wealth and better contrivances resonates with Bourdieu's notion that the experiences in the social world belong to a misrecognized order of this world, not an intellectual operation. The close affinities that run through Adam Smith, Veblen, and Bourdieu are not surprising as their views are based on the same concept of habitus meaning habit.

While Parsons' view of human action in a social system emphasizes the integration of cultural value patterns and the motivational structure of individual actors, a society would lose its cohesiveness as an organization of differentiated roles and statuses unless the majority of its constituent personalities share certain common value attitudes or sentiments. Institutionalization of common normative values and internalization of such values into the motivational structure of individual agents does not imply an over-socialization of man as often criticized. Parsons says that the stability of any social system depends on the degree to which common normative values are integrated into the need-dispositions of its constituent personalities, and that the conceptual schemes of rational instrumental goal-orientation, common in economics, are not adequate for dynamic analysis of social systems and social processes. We think that Parsons' dynamic theorem of sociology gives a useful conceptual scheme by which to analyze the evolutionary theories of Thorstein Veblen, Adam Smith, and Bourdieu, all of which address what is institutionalized and how this institutionalization influences the motivational structure of individual personalities.

Our review has made it sufficiently clear that all essential ingredients necessary for social actions and social systems that

Parsons analyzed can be identified in the theories of Adam Smith, Veblen, and Bourdieu. These theories agree on these points: (1) Society as an order is not an objective reality, but rather a product of mind. (2) Man is disposed to like certain things and to act in certain ways because his dispositions reflect cultural values and norms as well as are inculcated by the objective conditions of his existence (what is feasible, probable, impossible, or necessary). (3) Man's behavior, as grounded in social space (which is a world created by the mind, not an objective reality) is expressive *vis-à-vis* a cultural symbolism (which is also the product of creation by the mind) as it seeks symbolic profits given economic and cultural capital.

Our inquiry into the institutionalized dispositions will not be complete until an entity we call 'social want' is defined and given a specific treatment. All of the theories that have been reviewed make it clear that social want is not something that can be taken for granted as if it were given *a priori*, precisely because it cannot be defined unless the agent is embedded in a particular culture endowed with a particular cultural symbolism. Furthermore, since social want is the sense of privation felt by the dispositions of the agent, it itself is a product of evolution, through which certain dispositions emerge along with cultural capital of life-styles distributed over a range of social classes that come into being. The sense of privation is felt only if the agent has a certain aspiration to overcome it, which should be part of his dispositions. Hence, the notion of social want requires two things: (1) certain social objects such as the life-styles of various classes that the agent cognizes and to which the agent himself is oriented, and (2) a socially acquired desire to seek upper status identification by emulating such life-styles. More specifically, social want must be defined as a convoluted want in that it takes both social facts (e.g., life-styles and their popularity across social classes) and shared normative values that are internalized into the motivational structure (e.g., the motive of emulation and avoidance for upper status identification under a cultural symbolism) for its orientation. Unless social want is convoluted in this sense, it would be difficult for any given society to generate its dynamism through innovation and industry. We now turn to the problem of how to define social want, with a hope to bridge the gap between economics and sociology, by introducing the notion of socio-economic rationality (i.e., the rationality of maximizing the symbolic profits of social status identification through emulation of higher status life-styles).

Social Want and Socio-Economic Rationality

Adam Smith, Veblen, Bourdieu, and Parsons agree to the point that many of human wants are socio-cultural in nature. They support the view that human wants (or individuals' preferences or need-dispositions) are grounded in the institutionalized common normative values introjected into the motivational structure. If human wants are institutionalized (as wants created by the mind as it creates a social space), the idea of the utility function loses its power to explain human behavior if this behavior is rooted in such wants. The reason is clear: When it comes to the social utility of any good (the utility of a good to meet our social want), it is not possible to know *a priori* how useful it can be, unless one has learned, hence knows how meaningful it is to acquire it for the purpose of upper status identification in a particular culture in which the choice is made; that is, the social value of a good should consist in the symbolic profits it yields, or in cultural consumption that it affords^v. This means that at least four things are needed for evaluation of a good for its symbolic value: (1) a social space or field which features life-styles of various social classes (such styles are the clusters of complementary symbols), (2) a measure of distance that separates social classes on the social status ladder, (3) some sort of an effective emulation and avoidance pattern, not in the notional sense of the best response function derived from a given payoff function, but rather as a socially meaningful effective pattern that is a composite of economic, sociological, psychological, and communicational factors that constrain the emulative desire of an agent, and (4) a measure or an index of the popularity of goods across various life-styles, which informs the agent of the extent to which goods can yield symbolic profits (in terms of higher status identification) if emulated. If the social value of a choice object is based on all these things, preferences can no longer be independent of the social space/field in which individuals are situated nor can it be independent of the motivational structure that reflects the normative values. In approaching the problem of choice decision making, economists usually start, with a good reason, with a utility function, whether this be defined on the space of choice objects or on the space of characteristics. In this conventional approach, the demand for any choice object reflects the nature of the objective constraints (that is, the budget constraint and a production function that mediates choice objects and characteristics). In contrast, the institutional theories of Adam Smith, Veblen, Bourdieu, and Parsons suggest that the utility of a good arises more from an individual's appreciation of its symbolic

value in relation to the social space perceived in his mind as well as in relation to the socially acquired dispositions, than from its objective characteristics. But, such appreciation of symbolic values requires that our tastes and thought be habituated in certain ways. Cultural consumption is a virtue in itself as Bourdieu argues, in that it reflects the objective conditions of existence, and social want is born from a sense of privation in this consumption. This is why we believe that an effective emulation pattern over the life-styles of various social classes or groups (not the notional reaction function) is critically important in defining social want. This is consistent with Bourdieu's idea of the effective demand of the habitus, which reflects all constraining objective conditions of existence.

Because of this relationship between symbolic values of goods and habituated tastes, it is important to relate man's symbolic-expressive behavior to the economics of bounded rationality *à la* Simon (1955, 1959) and to the economics of limited cognition (e.g., Cyert & March, 1963; Conlisk, 1988; Day & Pingle, 1991; Pingle, 1992; Pingle & Day, 1996). If cultural capital is a stock of life-styles that have evolved from the conditions of existence and is a collection of complementary clusters of symbols (each life-style is a cluster of symbols), it can serve as a powerful guide in directing the agent's choices by allowing him to focus on what is useful for symbolic profits and by letting him save cognition itself. That is, if a social space is a space in which life-styles appear as concentrated clusters of various cultural symbols and if the agent seeks symbolic profits, the most effective choices can be made by making direct use of them. From the standpoint of the economics of bounded rationality, we may name solutions offered by life-styles 'heuristic solutions' because of the economization they afford. But, it is more than that. As Bourdieu elaborated, the conditions of existence (the possibilities, probabilities, impossibilities, freedom, restraints, and what not) create virtues of consumption by way of forming life-styles. The capital of life-styles itself is a product of the restraining external conditions. Thus, it is not that the agent relies on life-styles because the external conditions of existence limits our rationality, but rather that the agent makes use of them actively because they are the virtuous ways of consuming created from the external conditions.

At any rate, it is useful to take note of the following observations on the logic of bounded rationality: (1) The decision-making environment including the internal psychology and the cognitive capacity of a decision maker has its limits; the internal psychology has its own way of perceiving things, and the cognitive

capacity is not unlimited; (2) the time endowment is fixed, so that all activities including thinking, cognition, and evaluation compete for the use of time; (3) information on which decisions are based is not only insufficient but often erroneous, but information gathering/processing to correct the situation requires a significant amount of time; (4) many situations in which decisions are made are not only risky but also uncertain beyond any objective probability (because the situations are novel), which requires that decisions be made on subjective probabilities. (5) Even if these conditions were not present, decision making in a social environment faces a serious problem of coping with uncertain responses from other agents. Under these limitations, decision makers may turn to solutions that are not only reliable but also economizing on the cost of decision making. If there are simple modes of behavior which have proved to be effective over the years through an error-learning process, there is a good reason to tap on such modes. This is, in essence, the point made by Simon (1978) when he brought forth the notion of bounded rationality exercised through the procedural rationality as opposed to the substantive rationality which requires substantial amount of resources.

In the case of choices made for symbolic profits, the agent cannot turn away from the social and cultural norms of society because it is precisely these norms that define symbolic values of choice objects. Hence, to the extent that human behavior is grounded in a social space and is, therefore, a symbolic-expressive behavior, it is necessary for the agent to turn to such norms for guidance on symbolic profit making. At the same time, the norms, particularly, in the form of life-styles, have emerged from the conditions of existence over time through trial and error, hence can serve as the source of heuristic solutions to otherwise complex problems. For expressive behavior in a social space, it is not only expedient but also necessary to rely on the knowledge accumulated in the life-styles, for turning away from them defeats the whole purpose of expressive behavior aimed at symbolic profits. Hodgson (1986) argues that in understanding human behavior it is not necessary to fall into the trap of complete voluntaristic individualism (typical in economics) nor into the trap of the structural determinism (as often found in sociology), by coming to terms with norm-oriented purpose behavior. Bounded rationality that draws on social capital of heuristics offered by life-styles allows human behavior to be molded by social and cultural norms while retaining the autonomy of individual decision makers. Relying on this capital not only facilitates our decision making but

also meets an important criterion of how to express one's choice as a symbolically meaningful choice. Thus, symbolic expressive behavior and orientation to social and cultural norms converge on the motive of bounded rationality.

Economization is a strong motive, for all of our resources including time and the capacity of cognition are limited. Hence, how to economize decision making is a matter of serious concern to all decision makers. Day (1984, 1987) listed seven basic modes of economizing choices: (1) obedience to an authority, (2) imitation of others' modes, (3) habit (unconscious repetition of past behavior), (4) unmotivated search, (5) hunch, (6) experimentation (trial and error), and (7) procedural optimizing (see also Pingle & Day, 1996). Some of these modes (particularly, (2), (3), and (7)) may draw on social and cultural norms, not only as a source of low-cost heuristics but also as a source of socially acceptable ways by which to seek symbolic profits in an invidious environment. In fact, it is impossible to seek such profits without knowing where the norms lie. Beckert (1996), on the other hand, argued that if the means-end relations on which economic calculations are based are lacking because of uncertainty, some external mechanisms are needed to reduce the choice set of decision makers and to restore certainty in the means-end relations. As Knight (1921) argued, uncertainty is not something that can be reduced to calculable probabilities. This implies that the means-end relations may break down under uncertainty. That is, choosing means does not lead to an end even in probability terms. If such relations break down, the power of the conventional rational choice theory falls with it. Hence, the condition of uncertainty necessitates that this theory be replaced by a more practical way of handling it that can somehow restore the means-end relations by narrowing the set of choice objects. As an alternative to the objective rationality, Beckert introduced the notion of intentional rationality as the kind of rationality that relies on simple devices as instruments of uncertainty reduction. Such devices include (1) tradition, habit, and routines, (2) norms and institutions, (3) structural pre-dispositions of decisions such as social networks, organizational structures, and past decisions, and (4) power relations (Beckert, 1996, pp. 827-829). Making use of these devices narrows the choice set of decision makers and make actions adaptive and hence predictable, by building up rigidities in human behavior. But, if this is the case, these devices beg a difficult question to answer: Why do they serve as devices of uncertainty reduction to begin with? In order for this to be true, the devices themselves must bear some sort of collective wisdom so that the decision makers feel good about the choices

they suggest. In this paper, we answer this question by showing why norm-oriented emulative behavior under a cultural symbolism simplifies the decision making, yet produces a cultural expressive behavior that serves the purpose of emulating higher statuses.

At any rate, Beckert's argument is consistent with Bourdieu's idea of habitus, which turns the external conditions of probabilities, possibilities, and impossibilities into virtues of making choices showing up as life-styles, as well as with the theories of Adam Smith and Veblen, which show how our tastes are circumvented and turn into the sense of nobility that can serve as the principle of surveillance. As those objects that do not appeal to the sense of nobility or do not fit life-styles are screened out, the choice set is certainly narrowed by this surveillance. The notion of intentional rationality also implies that the narrowing of the choice set must be intentional. We are not interested in those objects that merely serve as instruments of uncertainty reduction. We are interested in those instruments that serve our intention. Again, Adam Smith, Veblen, and Bourdieu come to support this argument, for they all argue that our consumption is a virtuous activity *vis-à-vis* a cultural symbolism that we are familiar with. Particularly important is the cultural capital of life-styles as clusters of symbolic values, which the agent intends to emulate or avoid. We can assume that Beckert's devices, (1) tradition, habit, and routines, and (2) norms and institutions, are all present in this capital, which serves not only as the device of uncertainty reduction but also as the device of facilitating symbolic profit making.

We also note that Beckert's argument that the devices of uncertainty reduction narrows the choice set, thereby making actions more rigid and predictable shares much with Heiner's insight (1983, 1989) that being bounded in decision making is an important source of predictable behavior, for decision makers turn to more inflexible decision rules. But, again, his insight begs another question: If agents turn to more inflexible rules, how do such rules come about? Are they part of the collective wisdom that has absorbed the cost of decision making under bounded rationality, and why this wisdom is focused more narrowly on the range of possible choices? All of the arguments made on simplification devices (i.e., economization of economizing) requires a higher principle that in fact renders the devices effective with respect to something in which agents are interested.

In a similar vein, Simon (1976) argued that the intended and bounded rationality (that takes the form of satisficing behavior) forms the theoretical basis of administrative behavior. We recall here that Hayek (1967) made a similar point that while our

conscious activities are subject to supra-conscious rules (which are intuited but whose content cannot be made clear), we resort to such rules as customs, habits, and moral rules in order to narrow the range of choice alternatives so that our actions are made more meaningful, which is the crux of the matter because any rule that makes our actions less meaningful would not be adopted (see also Hayek, 1973; 1988). In this regard, it is also worth mentioning that in the double contingency problem that Parsons (1954) addressed, ego and alter may resolve this problem by narrowing the range of their actions to those that are socially meaningful with symbols that can be interpreted easily. This is similar in spirit to what Gintis (2009) refers to as the choreographing of actions or strategies based on common beliefs and social norms. Certainly, the reliance on cultural capital of life-styles not only narrows the range of choice alternatives but also makes choices meaningful in symbolic terms. It cannot be a coincidence that the theories of cultural evolution by Adam Smith, Veblen, and Bourdieu all relied on habituation as the most important principle that turns the world of non-differentiated continuities into the world of symbols, where the agent's choice becomes focused on symbolic values rather than values of natural origin. A social space is distinctly different from a physical space in this regard. But, symbolic values or signs do not exist isolated from one another but exist as clusters that define life-styles as virtues of consumption, which makes emulation a socially desirable thing to do. Such life-styles narrow the range of choices and allows the agent, at the same time, to concentrate his industry on accumulation of wealth. The logic of bounded rationality and the tools we use to resolve it were pursued in various insightful forms in the 84th Dahlem Workshop on Bounded Rationality: The Adaptive Toolbox, Berlin, 1999 (e.g., Gigerenzer & Selton, 2001; Selton, 2001; Gigerenzer, 2001; Boyd & Richerson, 2001; Goldstein, Rappoporteur, 2001).

The recognition that human behavior is bounded-rational and that such rationality calls for devices that reduce the complexity of problem solving do support the institutional approaches of Veblen, Adam Smith, Bourdieu, and Parsons, or *vice versa*. We believe the following points are particularly important in constructing a model of norm-guided behavior (or norm-guided endogenous preference formation): (1) The society, as a system, takes on a bigger meaning than a mere aggregation of its parts, since it holds itself as an order by a principle of internal connection and integration that is higher than a principle that applies to its parts. (2) What the society has accumulated as social and cultural capital over years can serve as reliable sources of socially meaningful (i.e., symbolically

meaningful) simplification devices to otherwise complex decision problems. (3) Decision makers will turn to simple modes of behavior or heuristic solutions in order to economize on cognitive effort otherwise required to deal with the strenuous decision-making environment. (4) If preferences are composed of various needs that are not necessarily commensurate, these needs may have to be prioritized and satisfied sequentially with switching from one need to the next being effectuated as soon as the aspiration level is reached. (5) There are social and cultural norms (social institutions, customs, sanctions, cultural values, etc.), which would not be reproduced and sustained unless such norms motivate individuals to endow their actions with social meaning supportive of the norms. If the needs beyond physical ones are social needs that arise from social and cultural norms, such norms may account for the origin of norm-guided preferences under social interdependence. (6) More strongly, the formation of norm-guided preferences or the recognition of social needs reflects the desire to act in a socially meaningful way when there are serious limits to the objective rationality. Social and cultural norms are, therefore, not simply the sources of external influences on human behavior, but rather they endow the decision-making environment with a social and cultural structure in which norm-oriented preferences are actively formed to reproduce the structure itself. (7) Under a socially and culturally structured environment, individuals are likely to exercise local rationality within their zones of flexible responses in Day's terms (1984, 1986), which are determined by the history of their past emulation and avoidance and accumulation of economic and cultural capital. In Kahneman and Tversky's terms (1979), these zones, therefore, come with certain endowments reflecting the history of the decisions made, and provide the reference point in the process of emulation.

Based on these considerations, it is possible to construct a theory of choice behavior that answers Simon's call for procedural rationality as well as Hodgson's call for norm-oriented purposive behavior, by positing that low-cost heuristics to otherwise complex problems can be found in the life-styles of social groups. These life styles constitute the social capital that has been accumulated through collective learning processes. The idea is that if the cost of problem solving is too excessive for single individuals to bear, it makes sense to invest in this capital collectively by sharing the cost of the required investment, because the benefits of the accumulated consumption know-how accrue to all members of social groups. If one relies on this capital in making choice of consumption goods or durable goods, the task of selecting the best object from the set

of feasible alternatives is reduced to the act of referring to what has been tested and proved effective collectively. The life styles of social groups are embedded in a cultural-value system so that the act of orienting to them will be in accord with the need-dispositions that have internalized common normative values. This implies then that individuals in a social system are aware of appropriate choices to make as well as appropriate actions to take for the sake of upper status identification, with good understanding of what constitutes social sanctions that help define the socially acceptable parameters of the zones of flexible responses (Granovetter, 1985). In this sense, the society (as a social space) is not simply a collection of life-styles or clusters of wants or symbolic values, but is a culturally directed social field (analogous to a magnetic field in physics) in which the life styles of social groups exist as collectively-tested norms of consumption and in which individuals are informed of the effective direction for higher status identification when acting within such zones. It is such social field that gives rise to social want as a culturally directed social predisposition.

More specifically, building a theory of choice based on this social want requires a measurement of the degree to which this want is gratified by choice objects, so that this indexation can be used to form some sort of ranking on such objects. We may call this measurement the symbolic valuation. Since there is no *a priori* utility function, such measurement must be constructed from the social field. Suppose that this field has many social groups whose social statuses can be ranked along the social status ladder. Then, we may think of the life-styles of various social groups as being located on this ladder. One's current social status provides a reference point with respect to which the distance to other statuses can be defined, by subtracting the ranks of the latter from that of the former. With this convention, the social distance to a higher status takes a positive value whereas that to a lower status takes a negative value. If we could define an emulation-avoidance pattern on this social distance space, by taking into account all relevant forces that work on choice making, e.g., the economic principle that defines how costly it is to make any choice, the sociological principle that governs the presence of social norms and sanctions, the psychological principle that dictates how choice objects are perceived in the mind of individuals in terms of satisfaction, and the communicational principle that works on the flow of information between social classes, i.e., on how information is disseminated within and across social groups (see Ray, 1973), then it would be possible to approximate the degree to which any given

commodity can meet the social want by taking the convolution of this emulation-avoidance pattern with the objective data on the distribution of the commodity's popularity index over the lifestyles of the social groups. The most distinct feature of such measurement is that it is grounded in an actual social field in which social distance and the direction of social status emulation are defined. We may call such measurement the social want satisfying property of a commodity. If the social actors base their choice decisions on this convoluted measurement, it becomes an important source of social evolution driven by the motives for emulation and avoidance. This is very much in accord with what Adam Smith and Veblen expounded in their evolutionary theories. What distinguishes our notion of convoluted social want from any other treatment of human wants is that the social want here is captured as a joint product of institutionalized preferences/dispositions on the one hand and social capital of lifestyles as accumulated knowhow of consumption on the other, which directs our motives for symbolic profit making. There is no such thing as social want that can be treated in the abstract because it is always paired with an actual existing society that has its own cultural and expressive symbolism.

It should be reminded that the emulation-avoidance pattern that is based on the afore-mentioned principles is an effective pattern, effective in the sense analogous to the distinction between the Keynesian effective demand (which would arise if prices and wages were more or less rigid, hence if employment level and demand for goods are mutually constrained) and the Walrasian notional demand (which would emerge only under full adjustment of prices and wages). Just as the real purchasing power determines the former demand, in a similar vein, the effective emulation-avoidance pattern represents the real power to emulate or avoid with all its determinants taken into account: economic, psychological, social, and informational. Moreover, such patterns may give a certain dynamic structure to the emulation and avoidance game played by the constituent members of society with invidious culture, possibly giving rise to strategic complementarities between emulative efforts taken by the members and, therefore, to multiple equilibria of such actions (Cooper & John, 1988). This is analogous to the fact that when prices were rigid, there could be strategic complementarities among the production levels of different firms and/or industries and multiple equilibria of the total product of the economy.

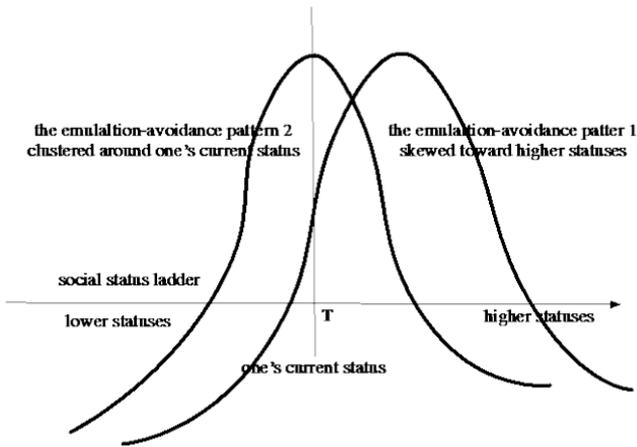


Figure 1
The emulation-avoidance pattern as an effective pattern

We now study the implications of this effective emulation-avoidance pattern by showing a few examples. Fig. 1 shows two emulation-avoidance patterns, 1 and 2. They are defined on the social distance dimension shown by the horizontal axis. Pattern 1 has a shape typical of individuals whose dispositions are leaning toward invidious comparison as in Veblen's theory of the leisure class or in Adam Smith's theory of moral sentiments. It is skewed toward higher statuses with avoidance on far ends. The negative values of the pattern on far ends are caused partly by social sanctions against excessive deviation, partly by the diminished flow of information from distant social classes, and partly by the risk of losing the complementarity of goods consumed. On the other hand, pattern 2 has a shape typical of individuals whose dispositions are more inclined toward the life-styles that are being lived now, again with avoidance on far ends; it captures roughly what Bourdieu has in mind when he says that the objective external conditions of existence are turned into virtues of liking what one has or is familiar with. If the psychological satisfaction from higher statuses is large and does not diminish much (according to the law of diminishing satisfaction), the shape of the emulation-avoidance pattern will be more skewed to the right. This is also true with less sanctions against deviation, which will be the case if an invidious culture strongly encourages emulation.

The emulation-avoidance patterns of different individuals are individual-specific depending on their current social statuses (their reference points) and the endowments of their cultural capital, but

they are homologous in structure, within or across social classes. This is consistent with Bourdieu's idea that the habitus dispositions of different individuals belonging to a social class are variations of the same homologous structure. This homology extends to all different classes basically because the logic of the habitus remains similar but also because the four principles determining the pattern should work in all classes, even at the top although there are no higher classes. As Adam Smith and Veblen stress, the social class at the top always tries to distance itself from the lower classes to avoid their emulation by setting a new fashion. The class at the top, therefore, has an emulation and avoidance pattern with the social statuses in the positive direction extending into a hypothetical region.

Apart from the emulation and avoidance pattern is a distribution of the popularity index of any given good in the life-styles of various social groups. An example will clarify the point. Suppose that the popularity of a durable good A is indexed and has a distribution shown by one on the right in Fig. 2. It shows how popular the good is across different social statuses. This is an objective social fact. The good is unpopular in the far ends, and its popularity peaks around the s^{**} -status. There is another distribution shown by one on the left in the same figure, which represents the popularity of another good B across social statuses, which shows its peak around the s^* -status. One can think of these distributions in the same way as the probability distributions as the total popularity across all social groups must add up to one.

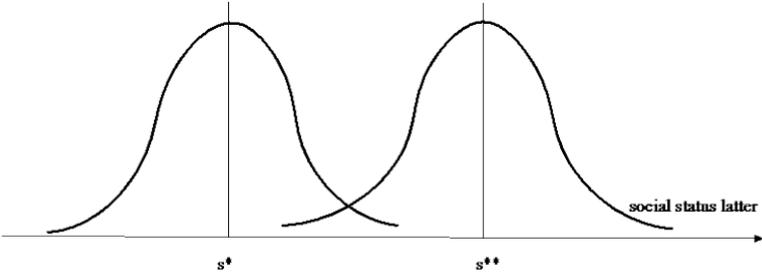


Figure 2
The distribution of the popularity of a good

Now, let an emulation-avoidance pattern in Figure 1 be represented, for an agent i , by $f_i(s - T_i)$ where T_i represents the agent's current social status (his reference point), and let a

popularity distribution of good $Ag(s)$. If we take a convolution of these two functions, we obtain a new measure given by:

$$A \text{ convoluted measure} = \int_D f_i(s - T_i)g(s)ds$$

where the integral is taken over the domain D of the social status s . This measurement shows the capacity of good A to meet the agent's social want of upper status identification at his current status T . We may, therefore, define this capacity as:

$$W_i(T_i: \text{good } A) = \int_D f(s - T_i)g(s)ds$$

where $W_i(T_i: \text{good } A)$ is the social want satisfying capacity of good A for agent i whose status is T_i . Note that if the popularity distribution $g(s)$ is interpreted as a probability distribution and if $f_i(s - T_i)$ is interpreted as a random variable, this capacity is analogous to the expected value of the emulation-avoidance pattern $f_i(s - T_i)$. That is, the social want satisfying capacity can be interpreted as this expected value. Also note that if the emulation-avoidance pattern remains similar, $f_i(s - T_i)$ can be obtained by shifting $f_i(s)$ to the right by the agent's status T_i .

If we take another agent whose social status is different from T , then with a homologous emulation and avoidance pattern, the social want satisfying capacity of the same good A for this agent will be different, greater or less depending on where his status lies relative to the distribution function $g(s)$. Hence, for two agents, i and j whose statuses are T_i and T_j such that $T_i \neq T_j$, and whose emulation-avoidance patterns are given by $f_i(s - T_i)$ and $f_j(s - T_j)$ which are homologous in shape, we will expect that

$$\begin{aligned} W_i(T_i: \text{good } A) &= \int_D f_i(s - T_i)g(s)ds \\ &\neq W(T_j: \text{good } A) = \int_D f_j(s - T_j)g(s)ds \end{aligned}$$

Thus, the same good has different social want satisfying capacities for different agents of different statuses even if its distribution function remains unchanged. The symbolic value of a good is, therefore, different between different agents.

This is the reason why this capacity cannot be measured by a utility function given *a priori* even if this function is indexed by the social status of the agent. The measurement of the capacity requires *a posteriori* information as to the distribution of the popularity across the social status ladder. This is consistent with Bourdieu’s point that for the habitus dispositions, it is not possible to dichotomize dispositions and the external conditions of the existence, and with Parsons’ view that the scheme of instrumental goal-orientation is not adequate for actions motivated by institutionalized dispositions that internalize common normative values. Any scheme of instrumental goal-orientation would require an *a priori* given objective function independent of the means to achieve it, which is impossible to meet for symbolic expressive behavior based on dispositions.

To the extent that the emulation-avoidance pattern reflects all relevant principles discussed above (the factors that determine its effective shape), the measured capacity can be thought of the effective social or cultural capital (expressive-symbolic capital) contained in a good or in a bundle of goods in question. Since the measurement takes a numerical value, it defines a binary relation on any pair of choice objects, single goods or composites of goods. Thus, with this relation defined on the space of choice objects, we are in a position to analyze its properties such as reflexivity, transitivity, and completeness. Since these properties are met, the binary relation constitutes a preference order. This fact allows us to characterize the agent’s choice based on social want satisfaction in rational terms; that is, the agent’s choice from any budget set can now be rationalized as being the most preferred bundle in this set (see Richter 1971 on rationalizability). Here, the phrase, “the most preferred”, refers to the highest in the social want satisfying capacity (see Hayakawa, 2000). The difference from the conventional theory of choice, which is based on the premise that a preference relation or a utility function is an *a priori* given mapping, is clear.

Denoting the social want satisfying capacity by SWSC, we may formally write this optimization problem, as a first approximation, as follows:

$$\begin{aligned} \text{Max}_x \text{SWSC}(x) &= \prod_{i=1}^n \left[\int f(s - T)g(s, x_i) \right] \\ \text{subject to: } &\sum_{i=1}^n p_i x_i \leq M \end{aligned}$$

Where M is the agent's income or wealth; x_i is the quantity of the i -th good; p_i is the price of this good; $f(s - T)$ is an emulation and avoidance pattern; $g(s, x_i)$ is a popularity distribution of x_i (its quantity is allowed to vary to take into account the fact that a small amount of x_i may be popular while a large amount is not); \prod is a product notation. The reason why SWSC is expressed as a product of the n convolutions is because emulation is targeted at a life-style, which requires that certain goods be consumed in a complementary manner. The idea is that a commodity bundle x may have a higher social want satisfying capacity if it is consistent with a life-style to be emulated. Formalizing the expressive behavior in this manner shows that it produces a consistent and rationalizable behavior. Since such behavior is based on the symbolic meaning of choices made in terms of upper status identification, we call its governing principle the socio-economic rationality as opposed to pure economic rationality.

Thus, measuring the social want satisfying capacity of any choice object by taking a convolution of an emulation-avoidance pattern with a distribution pattern of its popularity across social statuses, and postulating the agent's behavioral principle as the optimization on this capacity under a given budget set grounds the agent's choice in an actual social space in which he emulates the life-styles of higher statuses. Note again that it has to be a convolution of two functions, one defining an effective emulation and avoidance pattern anchored in one's current social status and the other giving a distribution of the popularity of any given good, single or composite. The latter is an objective social fact, hence stays the same for all constituent members of the society. The former differs from one individual to another although the same set of principles or factors determine its homologous structure. Since the life-styles are the consumption norms associated with social classes, and also since the desire to emulate higher statuses is a cultural value norm (in an invidious culture), optimization on the social want satisfying capacity defines an effective norm-guided behavior that works proficiently for symbolic profit seeking.

Many of human wants or needs are physiological, but humans have cultivated many socially acceptable and symbolically meaningful ways of satisfying them. It is this fact that makes the symbolic profit seeking behavior particularly important. That is, when there are many objects that can satisfy wants and needs to various degrees, the social want satisfying capacity contained in them will be a final judge of which object to choose. This fact can be formalized by considering a satisficing lexicographic preference

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ordering defined on the space of all wants/needs, physiological or social, which are prioritized, with each want having a satisficing level so that the agent's attention switches from one want to another when this level is reached. The last one must be the social want because this want is the final judge in cultural consumption. Since an ordering is reflexive, complete, and transitive, it will make the expressive behavior consistent, hence characterizable as a rational behavior (Hayakawa 2000). But, the ordering itself is not measurable, that is, it cannot be represented by a utility function (Georgescu-Roegen 1954, Fishburn 1974). Parsons characterized human dispositions as need-dispositions, and needs can be prioritized, which makes it plausible to think that the agent attends to them by setting certain satisficing levels.

It is interesting that Day's notion of the zone of flexible responses, the zone in which an individual makes his or her flexible decisions in a recursive system, shares much in common with a socio-economically determined zone discussed here, in which an individual tries to make the most meaningful choices for upper status identification by convoluting the effective emulation-avoidance pattern with the social facts of the popularity distribution of choice objects across social statuses. We can think of this zone as being determined by one's current social position (including his income, wealth, and cultural capital) like in the case of Bourdieu's habitus. More specifically, each agent, occupying a certain position in a social space, seeks upper status identification by trying to move from one zone to another in a direction that is most effective.

As Adam Smith and Veblen argued, seeking higher statuses or the image of such statuses by emulating their life-styles is an essential part of an invidious culture. But, such seeking is based not on utility functions (or the payoff functions) given *a priori* but on a socio-culturally inculcated desire for upper status identification under an effective emulation and avoidance pattern determined by the conditions of social sanctions, information flow, psychological satisfaction, and feasible economic means. As we discussed above, it is possible to characterize what the agent seeks as *homo socius*, which we defined as the symbolic profits represented by the want satisfying capacity contained in choice objects. That is, the agent's expressive behavior based on institutionalized dispositions (or need dispositions) can be formalized as the rational behavior in terms of symbolic profit seeking subject to the feasibility of economic means. This allows us to state, as a general proposition, that the agent of institutionalized dispositions is rational in his or her expressive

behavior as much as the same agent would be equally rational in economic profit seeking. But what makes cultural expressive behavior so attractive and commanding is that, by attending to norms of life-styles, it is not only consistent and rationalizable but also predictable and interpretable in symbolic terms, hence serves as an effective medium of cultural evolution by facilitating symbolic communication.

Concluding Remarks

Our discussion on social norm-guided choice behavior and emulation-avoidance patterns suggests that it is possible to articulate the institutional nature of choice decision making of agents as well as how this nature mediates the evolution of a socio-economic order (which draws on the formation of the common normative values and the introjection of such values into the motivational structure of each person). Such articulation goes with Hodgson's (2004) recapitulation of the reconstitutive effects of institutions on the formation of individual preferences as the key to the mechanism of institutionalization. It goes equally well with his recapitulation of the degree to which institutional evolution may depend on habit formation, which occupies the central place in the theories of Adam Smith, Veblen, and Bourdieu. Also, our view is very supportive of Gintis' view (2009) that humans have a normative predisposition to let common beliefs and social norms to choreograph a correlated equilibrium, which points to a new direction in understanding how the bounds of reason and forms of sociality are integrated by a higher principle that can potentially harmonize conflicting interests of social actors. Such a view is an outgrowth of Parsons' institutionalization theory which addressed, on a grand scale, the double contingency problem that needs to be resolved in one way or another to avoid the Hobbesian disorder. Parsons' theory says that social systems are constituted of the need-dispositions that individual actors acquire by internalizing common normative values into their motivational structures. This theory can still provide a powerful framework of analysis that can highlight the importance of integrating social ontology of downward causation (from the emerging properties of social norms to decisions and interactions of micro units) with economic ontology of upward causation (from actions and interactions of micro units to the emergence of social norms) as well as the importance of integrating cultural symbolism and norm-orientation with the voluntarism of agents (Alexander 1983; Alexander & Giesen 1987). As argued in this paper, we can go beyond Parsons'

division between economics (whose methodology consists in instrumental rationality) and sociology (whose methodology consists in analysis of institutionalized dispositions and behavior), by showing that choice behavior based on such dispositions can still be articulated as a rational behavior that seeks symbolic profits. In fact, as the theories of Adam Smith, Veblen, Bourdieu, and Parsons indicate, institutionalization of tastes, which is a product of evolution, is fundamental to any society. If so, human behavior based on institutionalized dispositions must transcend the dichotomy between objectives and means. Yet, it produces a predictable and rationalizable behavior that should contribute to the formation of a stable socio-economic order.

Rather than assuming that agents have perfect information required for his decision making or for strategic calculation, we should stay within the site in which agents' dispositions are formed to reflect the structural features of society, and ask a more relevant question as to whether it is possible to characterize agents' behavior in this site as rationalizable expressive behavior aiming at symbolic profits of one kind or another. We have demonstrated that it is possible to do so, although it is not the only way, by defining such profits as the social want satisfying capacity contained in choice objects with due regard to what it means to maximize this capacity in terms of emulation and avoidance of lifestyles across social statuses with economically feasible means. The expressive behavior characterized as such is the source of consistent predictive behavior that reinforces common normative values, and which, for this very reason, serves as an effective medium of cultural evolution by facilitating symbolic communication.

Notes

ⁱSimon (1978), referring to the concept of the rational man in economics as a perfect utility maximizer and writing on the trade between economics and other sister social sciences had this to say:

It is this concept of rationality that is economics' main export commodity in its trade with the other social sciences. It is no novelty in those sciences to propose that people behave rationally – if that term is taken in its broader dictionary sense. Assumptions of rationality are essential components of virtually all the sociological, psychological, political, and anthropological theories with which I am familiar. What economics has to export, then, is not rationality, but a very particular and special form of it – the rationality of the utility maximizer, and a pretty smart one at that. But international flows have to be balanced. If the program of this meeting aims at more active intercourse between economics and her sister social sciences, then we must ask not only what economics will export, but also what she will receive in payment. An economist might well be tempted to murmur the lines of the tentmaker: "I wonder often what the Vintners buy – Only half as precious as the stuff they sell." Simon (1978, p. 2)

ⁱⁱThe field of behavioral economics and psychological economics has cultivated new approaches to explaining human behavior that are more consistent with the way human mind and psyche actually work to affect human behavior. We are now familiar with such notions as prospect, reference dependent preferences, endowments effects, and hyper-discounting, which have contributed a great deal in explaining human behavior that is not easily reconcilable with the traditional economic theory. These notions cannot be ignored in cultural-symbolic expressive behavior, for which risk-taking of emulation and the valuation of choice objects for their symbolic serviceability depend on economic and cultural endowments as well as on where the agent is located in a social space and the degree of uncertainty which tends to create a strong bias toward the current social status and life-style. See, e.g., Kahneman & Tversky (1979), Kahneman & Knetsch, & Thaler (1990, 1991), Tversky & Kahneman (1991), Rabin & Thaler (2001), Koszegi & Rabin (2004), Laibson (1996, 1997), Ainslie (1991) and Ainslie & Haslam (1992).

The field has benefited a great deal from another line of research, that is, experimental economics and game theory, on such important topics as prosocial behavior, fairness, reciprocity, and altruism. These developments are extremely helpful in demonstrating that man's dispositions are not simply self-centered but anchored in social norms of fairness and other-regarding. See Fehr & Gächter (2000) for a review of the literature.

It should also be noted that sociology itself has seen a new development known as rational choice theory, which attempts to explain complex social phenomena in terms of rational actions and voluntary exchanges of individuals. See Homans (1961), Blau (1964), and Coleman (1973) for an early development in 1960s and 1970s, and Coleman (1991). It has brought a new challenge on how to reconcile rational actions with socio-cultural norms, a theme of central concern to Parsons (1951). Our paper is addressing this challenge by delving into cultural-symbolic expressive behavior based on institutionalized dispositions. The novelty of our approach is that we distinguish between the rationality based on utility function given *a priori* and the effective rationality which is revealed through a convolution of an effective status emulation pattern and the information on the distribution of choice objects in terms of their popularities across social classes.

ⁱⁱⁱOn this grand beauty of the system, Smith writes:

.... If we consider the real satisfaction which all these things are capable of affording, by itself and separated from the beauty of that arrangement which is fitted to promote it, it will always appear in the highest degree contemptible and trifling. But we rarely view it in this abstract and philosophical light. We naturally confound it in our imagination with the order, the regular and harmonious movement of the system, the machine or economy by means of which it is produced. The pleasures of wealth and greatness, when considered in this complex view, strike the imagination as something grand and beautiful and noble, of which the attainment is well worth all the toil and anxiety which we are so apt to bestow upon it (MS, p. 263).

^{iv} Placing Freud's social theory within the Hobbesian problem of order was criticized by Kaye (1991) as a false convergence. The idea that asocial human nature is somehow transformed into a social one as individual personality internalizes social and cultural forces into the superego obscures Freud's theory, which is based on the notion of unconscious mental processes driven by ambivalent desires subject to the defensive forces of repression (p. 89).

^v The literature on cultural, symbolic, or conspicuous consumption has flourished in recent years. For example, see, Lizardo (2008), Han, Nunes, & Dreze (2010), Sweet (2011), Berger, Ho, & Joshi (2011), Torelli & Cheng (2011), Firat, Kutucuoglu, ArikanSaltik, & Ungel (2013), Warde (2014), Kastanakis & Balabanis (2014), Dubois & Ordabayeva (2015), Deans, Samantha, Daube, Derevensky, & Gordon (2016), Pronay & Hetesi (2016), Goldberg, Hannan, & Kovacs (2016), Goldberg, Hannan, & Kovacs (2016), Chang, Wang, & Chen (2016) and Torelli, Ahluwalia, Cheng, Olson, & Stoner (2017). Our paper differs from these studies in that it attempts to show the rationality of expressive consumption behavior based on institutionalized dispositions.

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3. Legacies of rational expectations, Lucas's contributions, and philosophy of time and existence

Introduction

Production the first couple of decades of the post World War II era, Keynes's *General Theory* (1936) swept across the field of economics. This theory offered a new view that could explain why and how an economy may fall into the state of involuntary unemployment as an equilibrium phenomenon if prices and wages are rigid enough. It was revolutionary against the classical economics, which held on to the view that glut and involuntary unemployment are not tenable because prices and wages cannot remain rigid under such conditions. The core feature of Keynes's theory was later formulated as an IS-LM model by Hicks (1937) and Hansen (1949, 1953), which served as a guiding model for policy making as well as for pedagogical purposes until inflation became a central issue after the 1960s. The Keynesian theory is based on the premise that the economy can be structurally modeled by a set of the so-called behavioral equations that are supposed to remain invariant to economic policies since such policies, despite their endogenous nature, are treated as external forces that are applied to the economic system from outside. It was a common belief at the time that these equations, regardless of the level of sophistication, can be statistically estimated from the historical data. The behavioral equation approach, combined with econometrics, turned into an art of econometric policy evaluation, the foundation of which had already been laid out by Tinbergen in

his theory of economic policy (1952). As the theory took over the center stage, business cycle theories of the 1930s and 1940s (e.g., Schumpeter 1939, 1942) were pushed to the sideline with a belief that business fluctuations can be taken care of by appropriate stabilization policies. The optimism was in the air, particularly in the United States under the flag of the Employment Act, which was enacted in 1946 and put the responsibility of controlling unemployment and stabilizing prices on the shoulder of the federal government. The Phillips curve, due originally to Phillips (1958) who observed an inverse relationship between the unemployment rate and the rate of wage inflation in the United Kingdom for a period of 1861 through 1957, added to this optimism with a belief that the curve is stable enough for stabilization purposes (Gordon, 2009).

Despite such optimism, already in the 1950s, it was observed in the consumption-income data that while the marginal propensity to consume is less than the average propensity in the short-run, consumption is largely proportional to income in the long-run, hence with little gap between the two propensities. In retrospect, it was the discovery of this discrepancy that opened the Pandora's box. The search of new theories looked into the idea of intertemporal optimization as an alternative way of modeling the decision making modes of economic agents. Two important theories were introduced along this line, one by Modigliani & Brumberg (1954) who proposed a life-cycle hypothesis of consumption-saving, and the other by Milton Friedman (1957) who introduced the notion of permanent income. Both theories have endured to this day and are still inspiring many economists (Deaton, 2005; Sargent, 1987). The profession apparently shifted its focus from the short-run to the long-run in search for a normative theory that can integrate short-run choices with long-run planning. The permanent income hypothesis, in particular, was a prelude to a revolution that was to take place soon afterward, under the name of rational expectations. Three seeds were already present in Friedman's theory: first, on the question of which income-generating process makes Friedman's distributed-lag computation of permanent income optimal; second, as a corollary to this question, on the inseparability of rational decision making modes from the environment in which such decisions are made; and, third, on whether agents' decision making itself should be viewed as a process rather than as a stable structural relation. Later, Muth (1961) gave an answer to the first question by identifying an income generating process that makes Friedman's distributed lag computation optimal, and, more than a decade later, Lucas (1976),

extending Muth's insight, answered the second question by elucidating how rational decision making modes are intimately related to the features of the economic environment including a politico-economic policy regime, and cast a serious doubt on the validity of the then popular practice of econometric policy evaluation. Lucas's demonstration led to a new view that decision making is a process, be it consumption or investment, rather than a structure and that even the entire economy as an aggregate might be understood as a process. Thus, a more fluid holistic understanding of the dynamics of decision making modes and the movement of the economy has replaced a rigid structural view, and because of this radical shift, large macro-econometric models, that had been developed and widely used for economic forecasting and simulation for more than two decades at the time, yielded the center stage to stochastic process models.

It was not widely known at the time, among economists or social scientists in general, that prior to the 1960s there was a radical shift in philosophy under the name of phenomenology attributed to Husserl and Heidegger. This phenomenology aimed at seeing things as they are including human consciousness and existence. For our purposes, we pay special attention to Husserl's phenomenology of the inner time consciousness and Heidegger's phenomenology of human existence, as they are directly relevant to the theory of rational expectations. The first delves into the internal working of our consciousness as to how this consciousness reconstitutes perceived things as temporal objects, and the second looks at how human beings exist, not as an ideal object, but as existence itself. Both have discovered temporality as the primordial principal. More specifically, the inner time consciousness always works with the temporal horizon of protention, presence, and retention. Likewise, the human existence consists in the ecstasies of temporalized temporality in its movement. Heidegger's analytics of Dasein is a phenomenological re-reading of Aristotle's *Nicomachean Ethics*; in this sense it has brought the age-old theme of ethics under the new light of phenomenology. We will argue in this paper that there is a close affinity between these phenomenologies and the revolution that took place in economics under the name of rational expectations. In retrospect, this affinity should not be surprising, because the way we make rational decisions is an expression of how we exist apart from any particular life it lives, which is made possible by the internal working of our own consciousness and is made visible by the actual choices we make in an enviroing world we encounter by our own self-movement. Through this encountering, we discover a

multitude of things in it, and we deliberate over them as means to achieve the end of our life. There is no objective world in which all things in it are already there with their essences perfectly known to us. Everything hinges on how our consciousness is activated as an intentional activity, how our daily living is conducted with this intentionality, and how resolute we are in taking up the responsibility of making our life complete and meaningful with the potential we are endowed with. All of this underlies our economic decisions, for the choices made by such decisions are aimed at the ultimate end of making our life a successful project. We know that philosophy advocates thinking that goes beyond presuppositions, assumptions, or hypotheses so as to come closer to the truth of things, tangible or intangible, including our own existence. Although economists have argued tirelessly that it is imperative to keep economics safe from the intrusion of the quagmire of philosophical arguments, economics and philosophy are not, and should not be, enemies to each other, contrary to the stance often taken by both camps. To be sure, our understanding of the way humans make choices is greatly enhanced by a deeper understanding of human consciousness and existence. Our consciousness as an intentional activity is aware that the time we allocate, be it subjective (internal time) or objective (the world time), is not unbounded, and that our existence as a teleological activity cannot escape the predicament that it is always constrained by the means at our disposal including time.

With such affinity between philosophy and economics in mind, this paper inquires into a close affinity between Husserl's phenomenology of the internal time consciousness and Heidegger's characterization of Dasein (human being) as unified ecstasies of temporalized temporality, on the one hand and economists' notion of the rationality of expectations unified with the temporality of decision making on the other. It is our view that this connection, historically speaking, was made visible and lucid, when the idea of intertemporal optimization was conjoined with rational expectations. In making this inquiry, we focus on Lucas's contributions along with those of Friedman and Muth, to highlight how a different way of viewing the decision making modes of rational agents has radically changed the course of the science of economics. At the same time, we are quick to see that this revolutionary view is not something that was discovered for the first time by those who advanced the rational expectations revolution, for it can be, in essence, traced back to Aristotle's ethics that the life of human beings is a life of teleological actions. However, Lucas was among the first to point out, by

demonstration, that the decision making modes of intertemporally motivated agents are inseparable from the decision making environment, and to integrate the idea of intertemporal optimization with the idea of endogenous expectations, to come up with the notion of market equilibrium as a rational expectations equilibrium path, which led to the view that an economy, as an endogenous system, is a process rather than a set of stable structural behavioral equations.

The paper is organized as follows. In section 2, we review Lucas's contributions to economics sciences, and relate them to Aristotle. In sections 3 and 4, we look at Husserl's phenomenology of the internal time consciousness and Heidegger's phenomenology of human existence, respectively, and relate these phenomenologies to the ideas of rational expectations and intertemporal optimization. In section 5, we trace how the notion of the rational expectations equilibrium has come about by overcoming many of the difficulties that will be mentioned. In section 6, we take up the concept of a policy regime and Lucas's critique of econometric policy evaluation, to see why and how decision making modes are intertwined with an economic environment including a policy regime. In section 7, we trace the development of monetary theory from Friedman to Lucas along the quantity theory of money, and show how the stage was set for Lucas's contributions. In section 8, we examine Lucas's theory of expectations and the neutrality of money in detail, so as to place his contributions in a better historical perspective. In section 9, we conclude this inquiry by discussing further the theory of rational expectations and Lucas's contributions in relation to the phenomenology of the internal time consciousness and existence.

Lucas's contributions and Aristotle's ethics

Two decades after the publication of the papers: "Expectations and the Neutrality of Money" in *Journal of Economic Theory* (1972), and "Econometric Policy Evaluation: A Critique" in *Carnegie-Rochester Conference Series on Public Policy* (1976), the Royal Swedish Academy of Science awarded Robert Lucas, Jr., Professor of Economics, University of Chicago, the Nobel Memorial Prize in Economic Sciences in 1995. It was in recognition of the path-breaking importance of the view he introduced; that is, the rationality of decision making of economic agents as a conjoined rationality of intertemporal optimization and expectations in the context of a decision making environment. In the immediate Press Release as well as in the Advance Information

released by the Academy, the two papers above were cited explicitly as his major contributions that made a lasting impact on the later development of economics sciences, along with the recognition of his contributions in investment theory (Lucas & Prescott, 1971), financial economics (Lucas, 1978), monetary theory (Lucas, 1980a, Lucas & Stokey, 1987), dynamic public economics (Lucas & Stokey, 1983), international finance (Lucas, 1982), and economic growth (Lucas, 1988). His contributions to business cycle theory, without mistake, should also be mentioned (Lucas, 1980b, 1981, 1987). His legacies are very much alive today, not only in the core theory of the New Classicism founded explicitly on the ideas of intertemporal optimization, rational expectations, and market equilibrium, but also in the opposing camp of Keynesianism that has been revamped, side by side, by such ideas as information imperfection, frictional adjustment, monopoly power, and strategic behavior. Lucas's influence on the camp of Keynesianism is attributable to his idea that economic phenomena result from the two-way relations between the decision making modes and the environment in which such modes take specific forms. It is, therefore, not surprising that the Keynesian economics, that had long dominated the profession in the postwar era with its advocacy of a structural view of an economy, reviewed its presumptions and resurged with a new stance that decisions of economic agents and the decision making environment cannot be separated as well as with a renewed commitment that an analysis of economic behavior must be based on the rationality principle conditioned by this environment. We often heard that the profession was divided into two camps, the New Classicism and the New Keynesianism, but such characterization is no longer tenable, for whatever approach one takes, we now share the same aspiration that decision rules of economic agents and the decision making environment (including the internal conditions of the decision makers as analyzed in behavioral economics) must be integrated by the rationality principle.

Thomas Sargent made the following remark at the 25th anniversary conference that commemorated the publication of Lucas's paper on expectations and the neutrality of money.

Equilibrium macroeconomics continues 'M.I.T. economics' in the ways it uses small but self-consistent 'parable' economies to confront broad facts. From the beginning, Solow's one-sector growth model and his growth residual and Samuelson's overlapping generations model were the vehicles that drove rational expectations revolutionaries to the front. Many of us regard Lucas's 1972 JET paper as the flagship of the Revolution; it is

different from the flagship of that earlier revolution, Keynes's *General Theory of Employment, Interest, and Money*, which was ambitious, wide-ranging, imprecise, and vague enough to induce twenty-five years of controversy about what the book really meant. Lucas's paper was a narrow, technical study of a modification of Samuelson's parable economy, designed to be a counterexample to interpreting a negative unemployment-inflation correlation as something that a particular type of monetary *cum* fiscal policy could exploit. There was never any confusion about what Lucas's paper meant, any more than there was about Samuelson's or Solow's. If Lucas's paper was slow reading for macro-economists, it was because we were unfamiliar with contraction mappings, and with thinking of equilibria as *functions*.

It extends our appreciation of Lucas's contributions to remember that he did not work in a vacuum, and that among his many gifts is the ability to demonstrate by choice of engaging examples the importance for macroeconomic policy questions of making pre-existing ideas fit together. Sargent (1996: 536)

In the 1960s and 1970s, large macroeconometric models of the US economy as well as economic forecasting conferences based on such models were popular, along the Keynesian tradition that stable behavioral equations can be estimated from the past data. While the debate between the Keynesians and the Monetarists was heated, the Monetarists' claims were still in the black box, although Friedman was striding along with his own theories of consumption and asset demand that are fundamentally different from the Keynesian theory. At one of these conferences held at the University of Michigan, Professor Warren Smith was urging the Monetarists to make their black box explicit so that both camps might be able to have a more fruitful debate on how output, employment, and prices are determined. It was not easy for the Monetarists to respond to such a call because they were actually attempting to go beyond the behavioral equation approach. Lucas's paper on expectations and the neutrality of money came at the time when this debate was at its peak.

We were all taught the Keynesian economics, and Lucas's paper must have been read with suspicion first, partly because the theory behind it was the quantity theory of money (as opposed to Keynes's liquidity preference theory), and partly because the paper introduced a completely new idea of rational expectations as a function and the notion of the rational expectations market equilibrium as a fixed point (as opposed to adaptive expectations, which was based on an error-learning scheme). In retrospect, the

Keynesian theory, popular at the time, was dominated by a certain epistemology that was founded on the presumption that an economy has a structure constituted of a set of stable behavioral equations, the parameters of which were believed to be estimable statistically from the past data. This epistemology was regarded by many Keynesians as a positive approach to the modeling of a macroeconomy, but left many questions unanswered, such as: (1) How is short-run related to long-run in decision making? (2) What does it mean to say that an economy is an endogenous system if expectations are left out of it? (3) How can we identify structural parameters by econometric methods when agents are forward-looking in nature? (4) How can we model forward-looking agents whose expectations are endogenously formed? (5) How are the decision rules of such agents related to an economic environment in which decisions are actually made? (6) How valid is it to view economic policies as exogenous forces when they are in fact endogenous responses of the authorities to contingent economic situations with the information they possess? Without answering these questions, the Keynesians proceeded to estimate the structure of an economy statistically and used it for evaluation of policies assuming that policies are exogenous forces to the system. On the contrary, Lucas tackled many of these questions face to face, and offered a very different way of modeling the decision making modes and an economy against the Keynesian methodology. Most importantly, he viewed economic agents as forward-looking planners, who make optimal intertemporal decisions with an endogenously determined market equilibrium taken into account, through the idea of expectations that are formed endogenously to be consistent with this equilibrium. This was an extraordinary achievement.

If we place this contribution of Lucas in a historical perspective, we see that the idea of rational agents as forward looking decision makers is a new vision of the age-old view that can be traced to Aristotle's *Nicomachean Ethics*. According to Aristotle, the life of human beings is a life of actions that are teleological in nature, hence must be directed and guided by the first principle of living well, by cultivating the virtues of character and intellect and by wisely exercising practical wisdom (the all-overseeing virtue of intellect, *phronesis*) in deliberating over the means that are within our power and choosing the best means to achieve our end, in every situation in which such choices are made. Our life is a continuous process of endless activities to achieve a series of interconnected ends that arise spontaneously from within ourselves. Because all actions are mediated by resources of one kind or

another, all agents have no choice but to deliberate over which actions to take and which means to choose, paying attention to the environment in which such actions are taken. All this is done with foresight in regard to the consequence of any particular action or choice before it is actually taken. If actions and ends are connected sequentially, every agent must foresee the future environment in which future actions will be carried out, and make a plan of actions accordingly. Since the consequences of actions cumulate to define the initial state from which to start our planning anew at any point in life, we have no choice but to make the best plan of actions from this initial condition in order to live our life of actions to the best of our ability. This is little different from the principle on which economics is based; that is, the explanatory power of economics is derived from the principle that choices we make are the best choices from the set of feasible means for our objectives. Thus, despite the common understanding that the origin of economics is in the idea of management of household or state, the real basis of economics can be traced to the ethical nature of human existence. Unfortunately, this plain fact had remained unheeded, until the theory of rational expectations and intertemporal optimization brought it back explicitly and made it a solid part of economic theory.

In *Nicomachean Ethics*, Aristotle defines the essence of human existence as *energeia* (activity), and the first principle of this existence as *eudaimonia* (or, more precisely, *entelecheia* as the activity in which its end is realized in the activity itself), and explicates what it entails in terms of deliberation over feasible means as well as choices made from such means. Influenced by Aristotle, Heidegger, in his *Being and Time*, characterized human existence as care and *ekstasis*. Whether such *ekstasis* means being thrown into the truth of being or the temporality in which human existence unfolds itself, human beings act for an end, understand and interpret the history of what they have done, and constantly project their being into its own most possibilities. Heidegger summarized such temporality by saying that the future makes the present in the process of having-been (Heidegger, 1962: 326 and, 374). Human beings are historical beings, and our starting point is always given by the history of the irreversible path of actions we took in the past, but, under any given initial condition we try to choose the best plan of actions into the future. Aristotle says in Book VI of *Nicomachean Ethics*: "we deliberate about things that are in our power and can be done", and "deliberation is about the things to be done by the agent himself", and "what is last in the order of analysis seems to be first in the order of becoming." That

is, by deliberation, we deduce from our end the best actions to take. Our deliberation ends when the choice has been made by the principle in ourselves. Thus, "choice will be deliberate desire of things in our own power." Can we find any better way of putting that we are, by nature, economic agents making the best feasible choices to achieve our own end? In Book III of *Nicomachean Ethics*, Aristotle says:

We deliberate not about ends but about means. For a doctor does not deliberate whether he shall heal, nor an orator whether he shall persuade, nor a statesman whether he shall produce law and order, nor does any one else deliberate about his end. They assume the end and consider how and by what means it is to be attained; and if it seems to be produced by several means they consider by which it is most easily and best produced, while if it is achieved by one only they consider how it will be achieved by this and by what means this will be achieved, till they come to the first cause, which in the order of discovery is last. For the person who deliberates seems to investigate and analyze in the way described as though he were analyzing a geometrical construction (not all investigation appears to be deliberation – for instance mathematical investigations – but all deliberation is investigation), and what is last in the order of analysis seems to be first in the order of becoming. And if we come on an impossibility, we give up the search, e.g. if we need money and this cannot be got; but if a thing appears possible we try to do it. By 'possible' things I mean things that might be brought about by our own efforts; and these in a sense include things that can be brought about by the efforts of our friends, since the moving principle is in ourselves. The subject of investigation is sometimes the instruments, sometimes the use of them; and similarly in the other cases – sometimes the means, sometimes the mode of using it or the means of bringing it about. It seems, then, as has been said, that man is a moving principle of actions; now deliberation is about the things to be done by the agent himself, and actions are for the sake of things other than themselves. For the end cannot be a subject of deliberation, but only the means; nor indeed can the particular facts be a subject of it, as whether this is bread or has been baked as it should; for these are matters of perception. If we are to be always deliberating, we shall have to go on to infinity.

The same thing is deliberated upon and is chosen, except that the object of choice is already determinate, since it is that which has been decided upon as a result of deliberation that is the object of choice. For every one ceases to inquire how he is to act when he has brought the moving principle

back to himself and to the ruling part of himself; for this is what chooses. This is plain also from the ancient constitutions, which Homer represented; for the kings announced their choices to the people. The object of choice being one of the things in our own power which is desired after deliberation, choice will be deliberate desire of things in our own power; for when we have decided as a result of deliberation, we desire in accordance with our deliberation. (*Nicomachean Ethics*, Book III, Sec. 3) (Underlying is mine.)

Aristotle's point that deliberation is about the things that can be done by the agent himself is particularly important for economics, precisely because the same principle underlies microeconomics. At one of the conferences the author attended, Milton Friedman made a remark to the effect that the essence of microeconomics consists in the fact that each person makes the best decisions for his or her end. That is, the deliberation on what to choose from the feasible means should be left to the person making such choices, not to any third party. The influence of Aristotle was the mark of the Austrian School founded by Carl Menger, who published his *Principles of Economics* (*Grundsätze der Volkswirtschaftslehre*) in 1871, and von Mises, Hayek, and Friedman carried the spirit of the School with faith in individual choices and free economies founded thereon. And, Lucas was definitely influenced by Friedman, and indirectly by Carl Menger and Aristotle. In fact, we can detect the Aristotelian influence in Lucas's contributions in the two papers we mentioned? In the auto-biographical account released by the Royal Swedish Academy of Sciences, Lucas writes and indicates that he read Plato and Aristotle:

I attended Seattle Public Schools, graduating from Roosevelt High School (where my parents had graduated in 1927) in 1955. I was good at math and science, and it was expected that I would attend the University of Washington in Seattle and become an engineer. But by the time I was seventeen I was ready to leave home, a decision my parents agreed to support if I could obtain a scholarship. MIT did not grant me one but the University of Chicago did. Since Chicago did not have an engineering school, this ended my engineering career. But when I began the 44 hour train trip "back east" to Chicago, I was pretty sure something interesting would turn up. What to do instead? I took some mathematics at Chicago, but lost interest soon after my courses got past the material I had half learned in high school. I did not have the nerve to major in Physics, which is what you did at Chicago in those days if you thought you could make it. The real excitement for me was in the liberal arts core of the Chicago College, courses from the Hutchins

era with names like History of Western Civilization, and Organization, Methods, and Principles of Knowledge. Everything in these courses was new to me. All of them began with readings from Plato and Aristotle, and I wanted to learn all I could about the Greeks. I took a sequence in Ancient History, and became a history major. Though I had no real idea what a professional historian does, I had learned that one can make a living by pursuing one's intellectual interests and writing about them. I began to think about an academic career. (Lucas, 1995) (Underlying is mine.)

And, in the same autobiographical note, Lucas writes about his experience with Milton Friedman's price theory sequence.

In the fall of 1960, I began Milton Friedman's price theory sequence. I had been looking forward to this famous course all summer, but it was far more exciting than anything I had imagined. What made it so? Many Chicago students have tried to answer this question. Certainly Friedman's brilliance and intensity, and his willingness to follow his economic logic wherever it led all played a role. After every class, I tried to translate what Friedman had done into the mathematics I had learned from Samuelson. I knew I would never be able to think as fast as Friedman, but I also knew that if I developed a reliable, systematic way for approaching economic problems I would end up at the right place. (Lucas, 1995)

With this review of Lucas' contributions, I now turn to Husserl's phenomenology of the internal time consciousness and Heidegger's phenomenology of Dasein, in sequence. These phenomenologies preceded the idea of intertemporal optimization and rational expectations in the 1960s and 1970s by several decades. Unfortunately, English translation came much later. As we show, they do have an important bearing on the essence of the rational expectations equilibrium theory.

Husserl's phenomenology of the consciousness of internal time

In his lectures: On the Phenomenology of the Consciousness of Internal Time (1983-1917) (hereafter PCIT), he suspends "world time, the real time, the time of nature in the sense of natural science and even in the sense of psychology as the natural science of the psychic", and focuses his investigation on appearing time and appearing duration as appearing, that is, on the immanent time of the flow of consciousness (PCIT, pp. 4-5). This stance is analogous to Kant's critique of pure reason (immanent reason) that

examined what pure reason is capable of and how it works, rather than criticizing particular outcomes of speculative reason (Kant, 1781).

On the essence of time and temporal objects Husserl writes:

The question about the essence of time thus leads back to the question about the “*origin*” of time. But this *question of origin* is directed towards the *primitive* formations of time-consciousness, in which the primitive differences of the temporal become constituted intuitively and properly as the original sources of all the evidences relating to time. (PCIT, p.9)

If we disregard all transcendences, there remains to perception in all of its phenomenological constituents the phenomenological temporality that belongs to its irreducible essence. Since objective temporality always becomes constituted phenomenologically and stands before us in appearance as an objectivity or as a moment of an objectivity only through this constitution, a phenomenological analysis of time cannot clarify the constitution of time without considering the constitution of temporal objects. By *temporal objects in the specific sense* we understand objects that are not only unities in time but that also contain temporal extension in themselves. (PCIT, p.24)

According to Husserl, the temporal object must include temporal distinctions, which are constituted in three acts: primal consciousness, retention, and protention (PCIT, p.40). We catch what is coming as something indefinite, perceive it by primal consciousness, and retain what is perceived as memory. To elucidate these acts, he first delves into the most intriguing unity of experience called memory, and the act of protention in relation to this memory. He observes that every memory contains expectations-intentions, and what animates the temporal object originally is the act of protentions that catch what is coming. Memory and recollective consciousness tells us that these protentions not only catch what is coming but also have caught and brought what has been caught to fulfillment, or re-fulfillment, to be exact. While original protentions catch what is coming as indefinite things (because how things that are coming will turn out to be are left open at the time of protentions), our expectations in recollection are settled in from the beginning. In this sense, recollection is not the same as indefinite expectations, but it has a horizon toward the future, which is also extended to the original protentions. Husserl writes:

Now in order to understand the insertion of this constituted unity of experience “memory” into the unitary

stream of experience, we must take the following into account: every memory contains expectations-intentions whose fulfillment leads to the present. Every process that constitutes its object originally is animated by protentions that emptily constitute what is coming as coming, that catch it and bring it toward fulfillment. However, the recollective process does not merely renew these protentions memorially. They are not only there in the process of catching what is coming; they have also *caught* it. They have been fulfilled, and we are conscious of this in the recollection. The fulfillment in the recollective consciousness is re-fulfillment (precisely in the modification that belongs to memorial positing). And if the original protention belonging to the perception of the event was indefinite and left open the possibility of things' being otherwise or not being at all, in the recollection we have an expectations settled in advance that does not leave all of that open, unless in the form of an "unfinished" recollection, which has a different structure from the indefinite original protention. And yet this too is included in the recollection. Thus there are already difficulties of intentional analysis here for the event considered separately, and then in a new way for the expectations that concern the succession of events up to the present: Recollection is not expectation, but it does have a horizon directed towards the future, especially, towards the future of what is recollected; and this horizon is fixed. As the recollective process advances, this horizon is disclosed in ever new ways and becomes richer and more vital. And in this process the horizon is filled with ever new recollected events. Those that formerly had only been indicated in advance are now *quasi*-present – *quasi* in the mode of the actualizing present. (PITC pp.54-55) (Underlining is mine.)

Then Husserl says that a duration of a temporal object is always represented with intentions directed at the past and with intentions directed at the future. This is particularly important because Husserl is saying that a temporal object, which has a temporal extension, cannot be perceived as such without these intentions. We note in passing that our life is a temporal object, hence has a temporal extension, and that this life as well as every temporal object in it have a duration, long or short. If so, it must be represented by the same two directional intentions, one directed toward the past events or experiences and the other toward what is anticipated to come. This point observed by Husserl should be projected into the way we make choices, that is, into the fact that decisions made are, in fact, under similar directional intentions, one directed at how we have come to where we stand now, and the

other directed at what we intend to fulfill in the future. Because it is always the same internal consciousness that is working, every temporal object of whatever kind must be subject to the same patterns of intentions and expectations.

Husserl says that every representation comes with the reproduction of the consciousness of the past enduring object and the consciousness of past or present or future attached to this reproduction, that the life of consciousness flows continuously, with every new memory reacting on the old in a retroactive way, and with the forward-directed intention belonging to the old being fulfilled, and that this consciousness is permeated with one unifying intention aimed at a series of possible fulfillments. He writes:

...A duration cannot even be represented, or better, cannot even be posited, without its being posited in a temporal context, with the presence of intentions aimed at the temporal context. Moreover, it is necessary that these intentions have the form either of intentions aimed at the past or of intentions aimed at the future. To the duality of intentions – to those directed towards the filled duration and to those directed towards the filled duration’s place in time – there corresponds a dual fulfillment. The total complex of intentions that makes up the appearance of the past enduring object has its possible fulfillment in the system of appearances that belong to that same enduring object. The intentions aimed at the temporal context are fulfilled by the production of filled connections up to the actual present. Hence we must distinguish within every re-presentation between the reproduction of the consciousness in which the past enduring object was given, that is to say, was perceived or in some way originally constituted, and that which attaches to this reproduction as constitutive of the consciousness “past” or “present” (simultaneous with the actually present now) or “future.”

Now is the latter also reproduction? This question can easily mislead us. Naturally the whole is reproduced, not only the then-present of consciousness with its flow but “*implicite*” the whole stream of consciousness up to the living present. That means – and this is a fundamental part of *a priori* phenomenological genesis – that memory flows continuously, since the life of consciousness flows continuously and does not merely piece itself together link by link into a chain. Rather, every new reacts on the old; the forward-direction intention belonging to the old is fulfilled and determined in this way, and that gives a definite coloring to the reproduction. Thus a retroactive effect, necessary and *a priori*, shows itself here. The new

points again to the new, which, in making its appearance, becomes determined and modifies the reproductive possibilities for the old, and so on. Moreover, the retroactive power extends back along the chain, for the reproduced past bears the character *past* and an indeterminate intention aimed at a certain location in time in relation to the now. Thus it is not as if we had a mere chain of "associated" intentions, one bringing to mind another, this one recalling the next (in the flow); rather we have *one* intention that in itself is an intention aimed at the series of possible fulfilments. (PICT, pp.55-56)

Husserl also points out that foreground cannot be foreground without background with respect to the temporal things, just as what is visible is visible against its background, or what is in space is in the spatial world as its background. In the case of temporal things reproduced as durations, such things are always inserted into a temporal form and a temporal background as a constituted temporality of before, now, and after. At the same time, such things are oriented to the living now. The point is particularly important, not only for internal time consciousness but also for human existence as this is a temporal object with its duration and its constitution as the past, the present, and the future as well as with its orientation to one's living. There is a clear connection between Husserl's inner time consciousness and Heidegger's human existence, Dasein.

...Foreground is nothing without background. The appearing side is nothing without the nonappearing side. So too in the unity of time-consciousness: the reproduced duration is the foreground; the intentions directed towards the insertion [of the duration into time] make conscious a background, a temporal background. And this is continued in a certain fashion in the constitution of the temporality of the enduring object itself with its now, before, and after. We have the analogies: for the spatial thing, its insertion into the surrounding space and spatial world; on the other hand, the spatial thing itself with its foreground and background. For the temporal thing: its insertion into the temporal form and the temporal world; on the other hand, the temporal thing itself and its shifting orientation in relation to the living now. (PICT, p.57)

Furthermore, Husserl says that what is actually present now is there itself. The two are essentially equivalent in the sense of coinciding. Such coinciding takes us all the way to Heidegger's Dasein, which literally means "being there", that is "there itself". In Heidegger's view, we are "there itself" but in a different sense since Dasein encounters what presences in the present. But, despite the

difference, what is there is what is present now, be it a thing or a Dasein.

The fundamental *temporal* distinctions: now, past (future). *How is the now related to the there-itself?* What is actually present now is there itself. And what is there itself individually is actually present now. The intuitive there-itself and the intuitive now (the adequately given now) coincide. *The now taken universally is therefore=there-itself+the objectivation: "simultaneous therewith."* (PITC, P. 218)

Thus, Husserl sees that our inner-time anticipates what is coming by protention, catches and brings it to its fulfillment in the present, and retains it as having-been in its memory, which is reconstituted retroactively as new experiences are inserted into it continuously. Every temporal object has a duration that is always posited with two-directional intentions: those directed at the past and those directed at the future, with perception constituting the present. That is, our inner time consciousness is always constituted with three moments: past, present, and future. There is no consciousness of past or future without perception constituting the present. There is no past without any future, nor is there any future without any past. Thus, a duration of any temporal object in the inner time consciousness has the horizon extending from the past to the future through the present. But, it is protentions that animate the process of constituting a temporal object as they anticipate what is coming and fulfill it in the present as what has been (PCIT, p.58). This is analogous to Heidegger's temporalized temporality that the future makes the present in the process of having-been, as will be seen below. If our inner time consciousness has these moments, all of our actions including perception must have a horizon of past, present, and future. The now in which what is actually present is present is equivalent to being there itself and simultaneously to being therewith, and we always perceive what presences now against the temporal background as well as against the background of living now or a project that is being pursued. In the case of decision making, what animates every process of decision making is expectations-protentions as to what we anticipate as coming as the consequence of the decision made and what is fulfilled in relation to what we intend to achieve in our life against the background of an envioning world as well as against the background of our life as a project to be completed. If we are to model the decision making modes of rational agents, it is important to consider the bi-directional intentionalities of our time consciousness and base our models on the temporal horizon of the past, the present, and the future. The theory of rational expectations

and intertemporal optimization has captured this temporal horizon in decision making through the notion of making a plan of interconnected actions over time as well as through the notion of an economic environment, now and future, which helps define the budget constraint of the resources that mediate planned actions. The theories that preceded the rational expectations and intertemporal optimization, the Keynesian theory in particular, did not base them on the temporality of our consciousness and existence, hence separated economic theorizing from the normative aspect of decision making.

Husserl's phenomenology of the internal time consciousness had a significant impact on the later development of phenomenology, with its view that our consciousness acts on perception with its inner-time, which is constituted as a duration having the horizon of retention, presence, and protention. His analysis showed how it is possible for human beings to perceive anything as a temporal object and keep it in memory that has its unities and continuity. The inner time consciousness left its influence on Heidegger, who shifted attention to the "there-itself" of human existence, which he named Dasein. Heidegger characterized Dasein as unified ecstasies of temporalized temporality. Clearly, Husserl's horizon of retention, presence, and protention acquired a new meaning when it is cast in the existential structure of Dasein.

Heidegger's phenomenology of Dasein

In the year 1927, Heidegger published his *Being and Time* (hereafter BT), in which he made a phenomenological inquiry into Dasein (human being in its existence as "there is") and characterized it as unified ecstasies of temporalized temporality. We now turn to this characterization and see in what sense the existence of human beings is such ecstasies. Before we do so, we note that Husserl's inner time consciousness, as internal process of consciousness to constitute temporal objects, can be characterized as similar unified ecstasies, in which its three phases: retention, presence, and protention are intergrated in the sense that protentions animate the process by catching what is coming and bringing it to its fulfillment in the present, and retains it as memory. The difference is in where the "there-itself" shows up, in human consciousness in which temporal objects are caught with the horizon of past, present, and future, or in human existence where Dasein is animated by anticipatory resoluteness in projecting its being into its ownmost possibilities. Clearly, the two are

inseparable and intertwined.

Heidegger's analysis of Dasein takes *Angst* as the phenomenal basis for grasping the primordial totality of the being of Dasein as *care* (BT, p.171). The being of Dasein is understood as self-projective being toward its ownmost potentiality-for-being, which implies that Dasein is always already ahead of itself (BT, p.179). But, because Dasein is always already thrown into the world, being ahead-of-itself is the same as being-ahead-of-itself-in-already-being-in-a-world (BT, p.179). Dasein is also being together with other beings that are encountered innerworldly. Dasein as care is thus understood as *Mitsein*, being-with-others (BT, p.180). This is quite similar to Husserl's observation that the now is the there-itself and that there-itself is simultaneously there-with, as noted above. As consciousness is intentional, hence active, it is possible to think of the primordial totality of animated consciousness that Husserl refers to as something analogous to "care" in Heidegger in existential terms.

If Dasein projects its being toward its ownmost potentiality-for-being and if Dasein is always a *Mitsein*, as being with the things encountered innerworldly, care must reckon with time. That is, time as within-timeness must turn into temporalization of temporality of Dasein as a project of projecting toward its ownmost potentiality to be completed in the horizon of time (BT, p.217). Husserl's inner time consciousness as a constituting activity is, in Heidegger, mobilized by Dasein's being toward its ownmost potentiality-for-being.

What is then projected is always revealed as anticipatory resoluteness (BT, p.299), which is the being toward its ownmost potentiality-of-being. This perdured coming toward itself is the primordial phenomenon of the future. That is, Dasein is futural in that it always anticipates coming toward itself (BT, p.299). But, Dasein is a thrown being, therefore, is "there" always as "already was". It is possible to take over this thrown-ness only if futural Dasein always comes back understandingly to its ownmost having-been (BT, p.299). Anticipatory resoluteness then discloses the situation and makes what presences in it present to be encountered in action (BT, p.300). Heidegger says:

Futurally coming back to itself, resoluteness brings itself to the situation in making it present. Having-been arises from the future in such a way that the future that has-been (or better, is in the process of having-been) releases the present from itself. We call the unified phenomenon of the future that makes present in the process of having-been *temporality*. Only because Da-sein is determined as temporality does it make possible for itself the authentic

potentiality-of-being-a-whole of anticipatory resoluteness which we characterized. *Temporality reveals itself as the meaning of authentic care.* (BT, p. 300)

Future, having-been, and present show the phenomenal characteristics of “toward itself,” “back to,” “letting something be encountered.” The phenomena of toward..., to..., together with ... reveal temporality as the *ekstatikon par excellence*. *Temporality is the primordial “outside of itself” in and for itself.* Thus we call the phenomena of future, having-been, and present, the *ecstasies* of temporality. Temporality is not, prior to this, a being that first emerges from *itself*; its essence is temporalizing in the unity of the *ecstasies*. What is characteristic of the “time” accessible to the vulgar understanding consists, among other things, precisely in the fact that it is a pure succession of nows, without beginning and without end, in which the ecstatic character of primordial temporality is levelled down. But this very levelling down, in accordance with its existential meaning, is grounded in the possibility of a definite kind of temporalizing, in conformity with which temporality temporalizes as inauthentic the kind of “time” we have mentioned. Thus if we demonstrate that the “time” accessible to the common sense of Da-sein is *not* primordial, but arises rather from authentic temporality, then according to the principle *a potiori fit denominatio*, we are justified in calling the *temporality* now set forth *primordial time*. (BT, p.302)

This is Heidegger’s view of Dasein, the way human beings exist. Dasein, as a thrown being with its having been, always projects itself toward its ownmost potentiality into the future and always comes back understandingly to its ownmost having-been. This projection releases the present in which Dasein encounters what presences in the disclosed situation. Thus, the future makes present in the process of having-been. The three moments of temporality are joined as unified ecstasies of temporality and self-transcendence toward one’s ownmost potentiality.

In *Nicomachean Ethics*, Aristotle saw the existence of human beings as a life of actions. Each action has its end, but this action-end dyad is not an isolated linkage, but is connected to other action-end linkages, to form a chain of linkages to achieve a higher end, and this chain itself is open-ended toward *Eudaimonia* or *entelecheia*. Heidegger has given Aristotle’s ethics his phenomenological reading, and captured the way the human being exists as a thrown being and projects its being into its ownmost potentiality and disclosing to itself what it encounters in action. In worldly terms, human beings, motivated to live well, constantly

aim at an end in action and deliberate what needs to be done to achieve this end (make a plan of steps to be taken toward an end), acting not in the abstract but in the actual concrete situation that is disclosed and in which what presences in it are encountered. By making a plan of actions into the future, what is expected to bear is brought to its fulfillment, and what is fulfilled shapes the past from which to start a new plan of actions. This phenomenology of Aristotle and Heidegger on the ethics of human existence, be it authentic or inauthentic, shows that this existence is futural or anticipatory as well as historical, and that all actions are temporal in the primordial sense. Heidegger draws a line between authentic and inauthentic existence, a line that separates the world of authentic existence from the world of the they and the everydayness of our living, as the latter, guided by taking care of things and by circumspection under the usual concept of time, is the vulgar version of the former. Heidegger makes this point clear as follows:

The temporal interpretation of everydayness and historicity secures the view of primordial time sufficiently to uncover it as the condition of the possibility and necessity of the everyday experience of time. *Da-sein* *expends itself primarily for itself* as a being that is concerned about its being, whether explicitly or not. Initially and for the most part, care is circumspect taking care of things. Expending itself for the sake of itself, *Da-sein* “uses itself up.” Using itself up, *Da-sein* uses itself, that is, its time. Using its time, it reckons with it. Taking care of things which is circumspect and reckoning, initially discovers time and develops a measurement of time. Measurement of time is constitutive for being-in-the-world. Measuring its time, the discovering of circumspection which takes care of things lets what it discovers at hand and objectively present be encountered in time. Innerworldly beings thus become accessible as “existing in time.” We shall call the temporal quality of innerworldly beings “*within-time-ness*.” The “time” initially found therein ontically becomes the basis for the development of the vulgar and traditional concept of time. But time as *within-time-ness* arises from an essential kind of temporalization of primordial temporality. This origin means that the time “in which” objectively present things come into being and pass away is a genuine phenomenon of time; it is not an externalization of a “qualitative time” into space, as Bergson’s interpretation of time—which is ontologically completely indeterminate and insufficient—would have it. (BT, p.306)

Finally, we heed what Heidegger says on the mode of *Da-sein*

and on the connection between care, selfhood (the ontological constitution of the self-constancy of Dasein), and the factual falling prey to unself-constancy. In particular, the structure of care includes the phenomenon of selfhood and contains the danger of falling prey to the constancy of the they-world and fleeing from the authentic potentiality.

Da-sein is “*authentically itself* in the mode of primordial individuation of reticent resoluteness that expects *Angst* of itself. In *keeping silent*, authentic *being-one’s-self* does not keep on saying “I,” but rather “is” in reticence the thrown being that it can authentically be. The self that is revealed by the reticence of resolute existence is the primordial phenomenal basis for the question of the being of the “I.” Only if we are phenomenally oriented toward the meaning of being of the authentic-potentiality-of-being-a-self are we put in a position to discuss what ontological justification there is for treating substantiality, simplicity, and personality as characteristics of selfhood. The ontological question of the being of the self must be extricated from the forehaving, constantly suggested by the predominant way of saying-I, of a persistently objectively present self-thing.

Care does not need a foundation in a self. But existentiality as a constituent of care gives the ontological constitution of the self-constancy of Dasein to which there belongs, corresponding to the complete structural content of care, the factual falling prey to unself-constancy. The structure of care, conceived in full, includes the phenomenon of selfhood. This phenomenon is clarified by interpreting the meaning of care which we defined as the totality of being of Da-sein. (BT, p.297)

The phenomenologies of Husserl and Heidegger are about the same human being, one seen from the inner time consciousness and the other from human existence. They are homologous in structure. Every object that is perceived and constituted as a temporal object and every action that is planned and implemented to achieve an end are cast into a temporal horizon of past, present, and future. If the intentionality of human consciousness has dual orientations, one directed toward what has been fulfilled and the other toward what is yet to be fulfilled, and if it is the expectations-protentions that capture what is coming and bring it to its fulfillment as having been, all human actions, deliberated in consciousness, must have the same temporal structure. That is, the ecstasies of temporalized temporality of human existence and the inner time consciousness of every temporal object as a duration with retention, presence, and protention must be equivalent in primordial structure. We may say that human existence as such

ecstasies are made possible because human consciousness has its own ecstasies of integrating two directional intentionalities into a unified stream of experiences. Equally, human consciousness may be said to have two directional intentionalities because human existence is characterized by the ecstasies of temporalized temporality, driven by angst (the feeling of anguish mixed with hopes to find a meaning for the thrown being), and mobilizes all its power including consciousness to make one's life as complete and meaningful as it can be. If all objects we perceived are temporal in nature and cast in the horizon of primal consciousness, retention, and protention, so are our actions, which are cast with temporal distinctions and integration of past, present, and future. But, such distinctions are not something that is given from the outset. Rather, they come out because human consciousness and existence are animated by something deeper, which may be called the will to perceive in the case of consciousness and the will to make one's life complete and meaningful in the case of human existence.

In our perception and action, we anticipate what will be perceived next and fulfilled and what will be done next and fulfilled. Such perceptions form unities of memories in the background of the internal temporal order and one's daily living, and such actions form unities of experiences in the background of the thrownness of being and the desire to make one's life complete and meaningful. If we cannot be conscious of the past without our intentions directed at its fulfillment, and if we cannot compose any action without our intentions directed at its fulfillment and further actions to take, it is not possible to think of any perception, experience, or action as an isolated event.

The phenomenologies of Husserl and Heidegger have much to bear on how to look at decision making of human beings in this world. We have seen that both consciousness and existence are guided by two directional intentions and mobilized by expectations-anticipations of what is to come and to be fulfilled. At the same time, all of the perceived objects and the planned actions, as foreground, are possible only in the background of the surroundings: "a unitary intention of a multitude of interconnected objectivities and coming to fulfillment in the gradual, separate, and multifarious givenness of those objectivities" (PCIT, pp.56-57). In particular, all our actions are composed and implemented against the background of a multitude of interconnections with other people. No human being can exist without the help of other individuals. Thus, our intentionalities include not only temporal ones with respect to our own constituting of temporal objects but also another one, which is directed at a multitude of other

individuals, past, present, and future. Any intentional act will not be fulfilled unless there are other individuals living and supporting each other through an extensive web of interconnected activities, not only in the present but also in the future. In making a plan of actions, we are counting on this fact as the background in which our existence as a life-project is embedded.

Consciousness and existence are dual to each other. If the ecstasies of temporalized temporality run through them, all of the decisions made by human beings (as to which actions to take and which choices to make) are made with the same temporalized temporality universally across time. This implies that they must be connected intertemporally so as to fulfill an intended project, individual or communal. The consequences of those actions taken in the past cumulate (in terms of knowledge and skills and assets) and define the initial condition from which to start a new series of actions, always subject to the feasibility conditions across time.

Husserl's and Heidegger's phenomenologies preceded the revolutionary shift that took place in economics in the 1960s and 1970s by several decades. Had we given more thought to the fact that our consciousness has dual intentions and that our existence consists in ecstasies of temporalized temporality, our modeling of the decision making modes of economic agents would have been different and would have achieved something closer to this fact. Why then did it take so long before economics finally came to reckon with the temporality of our consciousness and existence? Keynes's theory almost totally abstracted from this temporality, and based its epistemology on a certain set of presumptions that ignored the normative nature of decision making as well as the role of the environment with which our decision making modes are intimately intertwined. The gap finally began to close through the effort made by Friedman, Muth, and Lucas among others. Far-stretched as it may sound, are we allowed to say that economics had finally come to cope with the temporality of decision making two centuries after Aristotle spoke on the ethical nature of human existence as a life of actions in ancient Greece?

Now, we turn to the theory of intertemporal optimization and rational expectations, so as to see the close affinity between the theory and the phenomenologies of Husserl and Heidegger. The theory is known today as the New Classicism as opposed to the Keynesianism.

The rational expectations equilibrium theory

The New Classicism is based on three closely-related ideas: (1) Individual agents' decisions are intertemporally motivated; (2) the expectations that agents hold about the future environment are formed endogenously within an economic system in which decisions are made, in a manner consistent with the formation of market prices; (3) the market clears (the demand and the supply are equilibrated continuously over time). Intertemporal planning calls for knowledge of the future economic environment in which planned actions are pursued, and market clearing calls for consistency of all planned actions of all agents in all periods. That is, market clearing must foresee an equilibrium price path into the future. The idea of intertemporal optimization itself was introduced to economics by Ramsey (1928), Koopmans (1963), and Cass (1965) in the context of growth theory, but it was Friedman's (1957) theory of permanent income that started a heated debate between Keynesians and Monetarists in the 1960s and in the early part of the 1970s over the issue of the intertemporal rationality as the fundamental cause of economic behavior.

The central question addressed and answered in Friedman's theory of consumption concerned which optimal consumption path would be the best plan against an expected future income stream. While this stream is a stochastic process, an agent determines his consumption path that will maximize his expected intertemporal utility. Friedman saw a close relationship between this optimal consumption path and permanent income, which is the annuity value of one's wealth, where this wealth is defined as the present discounted value of an expected stream of income. This theory is only part of a more general view that Friedman held, that is, all decisions made by rational agents, be it consumption-saving or demand for assets (financial or physical), are related to this measure of wealth. In his theory, none of our decisions should be treated as isolated decisions. This view is consistent with Aristotle's ethics, in which all decisions and deliberations are governed by the virtue of intellect, *phronesis* (practical wisdom).

Friedman's theory of permanent income is derived from the forward-looking nature of individual agents. But, because the future income is yet to be fulfilled, Friedman attempted to estimate this income from the observed income in the past, i.e., as an exponentially weighted sum of the past income, but without demonstrating which stochastic process of income generation makes this distributed lag estimation optimal. Later, Muth (1960) addressed this question in his paper "Optimal Properties of

Exponentially Weighted Forecasts”, showing that the optimality of Friedman’s distributed lag estimation requires that an underlying stochastic process be such that the first difference of income is a first order moving average process (which is the case if income has an error component which is the sum of a random walk and a white noise). Interestingly, by answering this question, he helped the profession shift its attention to the role of the environment in which economic decisions are made. That is, rational decision making modes make sense only when it is paired with the environment in which such modes take specific forms. This new awareness is particularly important in the light of the fact that prior to Friedman’s theory, Keynesians held a view that the structure of the economy can be described by a set of the so-called structural equations which are assumed to remain invariant to the environment that economic policies affect one way or another. Muth’s demonstration also had a very important implication that remained hidden for some time. The contrapositive statement of Muth’s proposition, which has the same truth value, can be stated as: If the stochastic income generation process is such that the first difference of income is not a first order moving average process, then the permanent income as estimated by Friedman in an distributed lag form is not an optimal estimate of the real interest return from the present discounted value of an expected income stream. More generally, the optimal modes of decision making hinge critically on an underlying stochastic process, so that if this process is altered by economic policies, the decision making modes themselves will change. It is this proposition that Lucas (1976) demonstrated in his critique of econometric policy evaluation over a decade later. That is, if the word “policy regime” is used for the environment, we are now allowed to say that the decision making modes of rational agents are policy-regime specific. Such dependence of decision making modes on policy regimes is known today as the Lucas critique. This critique is a denouncement of the Keynesian premise that the structural equations are invariant against economic policy regimes.

Following his 1960 paper, Muth (1961) wrote another path-breaking paper, “Rational Expectations and the Theory of Price Movements,” and suggested, as a powerful way of endogenizing expectations, that a subjective probability distribution held by economic agents as expectations be identified with an objective probability distribution of the variables for which expectations are formed. The idea was given the name of rational expectations. Thus, this paper formalized the idea that expectations are formed endogenously from an objective distribution of the variables in

question. But, the notion of rational expectations is not entirely Muth's patent since Mills (1957a, 1957b, 1959) introduced a similar idea, i.e., *implicit expectations*, under a different assumption on the predicted vs the actualized variable. At any rate, both ideas contrast with the notion of adaptive expectations introduced by Cagan (1954) and Nerlove (1956). Despite the potential power of Muth's rational expectations or Mill's implicit expectations, many prominent economists including even Friedman, Phelps, Lucas and Rapping, and many others, still carried their researches in the 1960s with the idea of adaptive expectations. Muth's idea had to wait for a decade before its power was fully recognized as a way of building a consistent intertemporal equilibrium model.

The decade of the 1960s was dominated by the Phillips curve controversy, that is, by the question as to whether this curve is stable enough for policy makers to rely upon in prescribing stabilization policies. The curve was first discovered by Phillips (1958), who plotted the unemployment rate and the rate of change of nominal money wage rates in the United Kingdom for the period of 1861-1957, and observed a negative relation between the two. Many economists conjectured from this and other similar studies that a stable relation might exist between the unemployment rate and the inflation rate, and, with a belief that it does, used it to underpin the tradeoff between the two rates. Friedman (1968) and Phelps (1967, 1968), on the other hand, argued that the Phillips curve is not a permanent relation and does not offer a stable tradeoff in the long-run. While Friedman and Phelps came to a similar conclusion, their theories are different; see the Nobel memorial lectures by Friedman (1977) and Phelps (2006) for their differences. Friedman (1968) argued: When an unanticipated change in nominal demand (money supply) is injected, the prices of goods rise. Firms measure the marginal value product of labor under the prices of the goods they produce; hence they would employ more labor with a fall in the real wage rate. Workers, on the other hand, base their consumption-leisure decisions on the average price, or, more precisely, on the expected price level, for they care about the real purchasing power of income they earn. Therefore, the higher wages that the firms would be willing to pay will be perceived as the higher expected real wages by the workers, given their expectations. This leads to higher employment and production. Thus, if, in the short-run, the unemployment rate falls below the natural rate due to a shock in nominal demand, the actual inflation rate must be exceeding the expected one. Such conditions cannot persist as the workers, becoming aware of a gap between

the expected and the actual inflation rate, adapt their expectations toward the actual. When this adaptation has fully caught up with the actual, the unemployment rate must return to its natural rate. Thus, this argument was termed the natural rate theory, or the augmented Phillips curve theory. If a nominal shock is fully anticipated, that is, if an increase in money supply is announced ahead of time and is known to every agent, the real wages the firms are willing to pay will be identical to the real wages the workers demand, leaving the employment of labor unchanged. It was already clear in the theory of Friedman and Phelps that it is unanticipated nominal shocks that can have real effects on employment and production; anticipated nominal shocks are neutral to real economic activities.

The concept of adaptive expectations was an important component of the natural rate theory. In the face of unanticipated shocks, agents cannot foresee perfectly where the economy will settle after such shocks, hence have no choice but to revise their expectations by an error-learning process, i.e., by closing some of the gap between what they anticipated and what they have actually observed. The basic problem of adaptive expectations, however, is that such expectations are essentially determined by the prices in the past. That is, by tracing adaptive expectations recursively into the past, whatever expectations agents may hold now for the coming year, for example, can be shown to be determined completely, in a distributed lag form, by the actual prices now and of the past. If so, such expectations cannot accommodate agents' foresight into the future. It is too restrictive to confine expectations in this manner, without allowing them to accommodate what may be expected to happen in the future and the impact of such expectations on the market. Lucas & Rapping (1969a, 1969b) presented an alternative theory to explain why the short-run unemployment rate falls below its long-run rate when the prices are above their normal levels, by invoking the idea of intertemporal substitution of labor with leisure. Again, the dynamic mechanism of this process was not fundamentally different from the idea of adaptive expectations, although the notion of the normal level is related to the long-run market equilibrium.

Adaptive expectations had to be overcome in a more fundamental way, by relating expectations to market equilibrium of the present and the future somehow. If we recall that Muth's theory of rational expectations was a theory of endogenous expectations with respect to market equilibrium from which is obtained an objective probability distribution of a variable for which expectations are formed, it was inevitable that the idea of adaptive

expectations had to be overcome by referring to such objective distributions. Once expectations are formed from a probability distribution of the market equilibrium price, economic agents must foresee not only equilibrium this period but also equilibrium in all future periods, because equilibrium this period would not be attained without equilibrium in all later periods when the agents' decisions are intertemporal. Thus, Muth's notion of rational expectations, when applied to the context of intertemporal optimization, entails that the rational expectation equilibrium is a *rational expectation equilibrium path* extending from the present to the indefinite future. The idea of adaptive expectations had to be overcome, and the urgency was shared by many in the profession at the time. To get ahead with this new idea, Lucas & Prescott (1971) published a paper, "Investment under Uncertainty", in which they showed how investment, output, and prices move over time in a competitive environment under a stochastic demand while the expected prices are held to have the same probability distribution as the actual prices after Muth (1971).

What has come out of the development in the 1960s was a realization that economic agents' decision making should be modeled as intertemporal optimization and that the expectations, which are necessary for such optimization, should be modeled as endogenous expectations derived from an objective probability distribution of the market equilibrium prices that would come about under this optimization. Any other theory of expectations leaves the relationship between formation of expectations and the probability distribution of market equilibrium prices unaccounted for, hence cannot answer the question of whether expectations are optimal or not in any meaningful way. In the light of such optimality, the theory of rational expectations fares well, since what is anticipated in terms of expected prices has the highest objective chance of being actualized in the market given stochastic disturbances. At any rate, in retrospect, the New Classicism was destined to join two ideas: intertemporal optimization on the one hand and rational expectations on the other (by integrating the two into the notion of the rational expectations market equilibrium, which has an objective distribution on which expectations are based). If *intertemporal optimization* is the name given to the rationality of decision making of economic agents, *rational expectations* must be the name given to the way agents form their expectations that are equally intertemporal (since expectations must be formed for all future prices in order for the market equilibrium to be attained in the present) and consistent with intertemporal optimization. That is why Lucas & Prescott (1971)

integrated Muth's theory of rational expectations into their model. When the idea of intertemporal optimization was combined with Muth's concept of rational expectations, the result was a powerful way of operationalizing the way economic agents make intertemporal plans with the help of endogenized expectations. Such expectations are now allowed to take into account the probabilities of anticipated future events and their impact on the market equilibrium prices, which leads to still another insight on the intimate relationship between decision rules of rational agents and the nature of the economic environment including a politico-economic policy regime.

A few more words are warranted on rational expectations. Before Muth (1961) introduced the idea of rational expectations, we did not have any formal theory of expectations formation; the idea of adaptive expectations was a practical halfway house when economists were grappling with the problem of information and the problem of uncertainty caused by innovations and other shocks. As noted above, this scheme, if traced recursively into the past, shows that the expectations are completely past-driven, which is inconsistent with the idea of expectations as foresight. If we know beforehand that certain events are likely to happen in the future and if such events are likely to change the economic environment that bears on what can be achieved by our actions, such events should be taken into account in our formation of expectations. If economic policies affect the probabilities of future events and the future utilities or payoffs, our expectations should reflect such probabilities, and our plans of action should be adjusted in accordance with how our payoffs will be affected. The theory of rational expectations meets this criterion, by replacing subjective expectations with objective ones. This is the insight of Muth's 1961 paper. It showed us a way to combining intertemporal optimization with endogenously formed expectations so as to get an objective distribution of the market equilibrium price path, from which such expectations are formed, although, admittedly, it is not easy to determine this price path.

The state of the economy is represented by a whole complex of market prices (the prices of final goods and services, the prices of raw material and intermediate goods, the prices of factors of production, etc.). Such prices not only make intertemporal planning possible but also perform the task of coordinating diverse activities of a multitude of agents with different preferences and technologies (Hayek, 1945). But, in order for such coordination to be tenable, it is necessary to forecast a whole complex of future prices starting with the present. If intertemporal optimization

requires foreseeing of the future environment in which agents' planned actions are to be carried out, and if what this environment offers is captured by a complex of market prices, then forming rational expectations, paired with intertemporal optimization, amounts to forming expectations about all future prices that are likely to prevail in the market. But, we know that the future prices will change by what agents plan to do in the future as well. Hence, forecasting of future equilibrium prices must be consistent with agents' plans themselves, which requires that the expected prices be consistent with the equilibrium prices that will actualize when agents' demand and supply plans are implemented as planned from the present to the indefinite future. If expectations are rationally formed, the future and the current market prices become connected through intertemporal plans. That is, the future prices are the prices that will prevail in the future as a consequence of agents' planned actions, and the present prices are the prices that prevail in the current market as a consequence of agents' plans extending from the present to the future. The current market equilibrium prices, therefore, are not just a consequence of agents' current actions isolated from what they plan to do in the future. Thus, rational expectations are possible only as an expected equilibrium price path from the present to the future, with all agents' planned actions taken into account. You can no longer isolate any particular period from the rest of the periods and talk about agents' expectations for that particular period independently of what is expected to happen in the rest of the periods. Once the difference is understood between rational expectations and adaptive expectations, we should be able to see why the idea of rational expectations revolutionized the way we conceive our planned actions as an optimal path that is consistent with an equilibrium price path extending from the present to the future. If market prices change today, it is not simply because something happened unexpectedly today. Even if something unexpected happened today, agents will try to guess what the implications of such events will be for their future and adjust their optimal plans accordingly, which in turn feeds back to what they do today. Likewise, if what is expected to happen in the future changes, so do our planned paths of actions from the present onward. Thus, the idea of rational expectations changed fundamentally our way of thinking about the decision making of rational agents; the market price today is an equilibrium phenomenon that is connected to all future market equilibrium. Thus, the present and the future become intimately connected through rational expectations.

Friedman's notion of human wealth as the present discounted

value of all expected future income and permanent income as the real interest return on this wealth (i.e., the annuity value of the wealth) was ahead of the thinking at the time, because it was rooted in the forward-looking nature of the decision maker, who does not decide what to do now only by looking at what means he or she has today, but rather makes a plan of actions by taking into account what is feasible now and in the future and how this feasibility is connected across time. The idea of rational expectations was implicit in his notion of wealth and permanent income in the sense that one has to form expectations about future income in order to know where one stands in terms of what is expendable without jeopardizing one's wealth position. Since it is goods and services that income buys that give rise to utility, we need to reformulate Friedman's theory in terms of an explicit intertemporal utility maximization subject to an intertemporal budget constraint. When this is done, it is necessary to introduce prices and price expectations, so that intertemporal planning may be made possible. Muth's theory of rational expectations led to a jump in thinking, and Lucas explored the implications of intertemporal optimization and rational expectations on the questions of the neutrality of money and the inseparability between decision making modes and the economic environment in general.

All of this development, when viewed in relation to the phenomenology of the consciousness of internal time and human existence, can be appreciated as an attempt to make economic theory more consistent with the way human beings mobilize their consciousness and actions in making their life as complete and meaningful as it can be. Husserl's retention-presence-protention and two-way intentionality of time consciousness, (one directed toward the past and the other toward the future) tells that our consciousness is an activity which is temporal all the way. If so, choice decisions made by economic agents must be consistent with this intentionality. That is, it is not possible to mobilize consciousness and action without foreseeing what is to be expected and fulfilled. If there is no retention without protention, and no protention without retention, this should be the core feature of human decision making. In much the same way, Heidegger's analytics of Dasein brought forth to our awareness that the essence of human existence consists in ecstasies of temporalized temporality with anticipatory resoluteness in making projections into our ownmost potentialities. If so, we must be standing outside of ourselves in our decisions to make our life complete and meaningful, that is, in our intertemporal decisions that connect our actions over time. Protention and anticipation are inherent in this

decision making, in that decision makers foresee what is to come and fulfilled, for without such foreseeing no planning of actions is possible. The idea dates back to Aristotle who says: "The man who is without qualification good at deliberating is the man who is capable of aiming in accordance with calculation at the best for man of things attainable by action" (*Nicomachean Ethics, Book VI, section 7*). In fact, Aristotle identifies the practical wisdom with the power of foresight in regard to one's life as he said: "This is why we say that some even of the lower animals have practical wisdom, viz. those which are found to have a power of foresight with regard to their own life" (op. cit. section 7). Aristotle related ethics to the project of living a good life of actions by cultivating our virtues, both of character and intellect, and mobilizing the overseeing virtue of practical wisdom in all decisions. It is this normative character of human beings that is brought back to economics by those who shared the insight behind rational expectations and intertemporal optimization. In this regard, we may say that the age-old wisdom of Aristotle has come through in our time, in a new form.

The concept of policy regimes and econometric policy evaluation

With this understanding of the role of rational expectations in modeling intertemporally motivated agents, I return to the two papers of Lucas: "Econometric Policy Evaluation: A Critique" and "Expectations and the Neutrality of Money", to discuss their significance in bringing our thinking closer to the ethical nature of human beings. In the former paper, Lucas showed why agents' decision making cannot be isolated from policies that will change the decision making environment. To make this point, Lucas starts with Tinbergen's theory of economic policy. Jan Tinbergen (the first Nobel Laureate in 1969, who shared the Prize with Ragnar Frisch), in his book *On the Theory of Economic Policy (1952)*, put forth a theory of economic policy, which was based on the idea that the dynamic movement of the state of an economy (summarized by a set of state variables) can be represented by a difference equation, which describes the state of the economy one period ahead as a function of three sets of variables: the variables that comprise the state of the economy of the current period, the forcing variables that are assumed to be exogenous to the system, and error terms. Selecting a workable form of this function and estimating its parameters from the past data, one obtains a first approximation of this dynamic movement, which, because of the

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presence of error terms, traces a stochastic sequence over time. Using this estimated function, we are in a position to simulate how an economy will move over time for a give path of economic policies (as forcing variables). In order to evaluate this simulated path, we need to define a certain functional (as a criterion) on the three paths: a stochastic movement of the state of the economy, a sequence of the forcing variables over time, and a sequence of error terms. The value of this functional being a random variable, its moments may be used to discriminate alternative policies for their effectiveness.

Lucas thought that this seemingly innocuous way of conducting econometric policy evaluation is imbued with a fatal problem that cannot be overcome by technical refinements alone, for the method itself is counter to the way decisions are made by intertemporally motivated agents. An economy evolves with innovations and fluctuates, and policy making always faces a new challenge. Each business cycle is different. In a regime in which the policies are rule-based and fiscal management is disciplined, agents will be able to make their intertemporal plans with better foresight. If, on the other hand, agents find themselves in a regime in which policies are discretionary and the authorities often renege their commitment, they will be forced to take this into account in their decision making and hedge against the unpredictability of the authorities. Thus, a politico-economic regime cannot be neutral to the way agents make their decisions. This implies that if a regime is altered, the parameters of the behavioral equations must also change. These parameters, in practice, were estimated from the past data, but these data reflect a mixture of decisions made under different policy regimes, hence, in theory, the parameters of behavioral equations cannot be uncovered through such estimation. We may simply assume that the structural parameters are stable enough to be relied upon in conducting policy evaluation, but such evaluation falls short of being an indisputable art of policy making. The reason why the decision modes of agents cannot be separated from policy regimes is that agents are intertemporally motivated. Agents simply do not let the past dictate their decisions and plans into the future. They make their plans as their optimal responses to the present and future environment defined by a politico-economic policy regime.

When a policy regime is examined, fiscal and monetary policies should not be discussed in sweeping terms. The government prescribes economic policies of various kinds, but economic agents also pay attention to how responsive the government is to problems at hand, how uncertain its commitment is, what type of policies it

is prone to choose, how often and in what way it surprises the public, and so forth. Economic policies come, therefore, with a whole set of these characteristics. Agents' guesses on the probabilities, uncertainties, and risks in regard to a multitude of events differ from one regime to another, and it is only natural for them to take these regime-specific uncertainties and risks into account in their decision making. Therefore, how to respond to the environment cannot be captured by a fixed rule that applies to all possible regimes that come with different probabilities, uncertainties, and risks. The essence of the Lucas critique is that the best decision modes are the ones that take into account regime-specific features of the environment. The reason is simple: The rewards from such modes, at least in their minds, are higher than those that ignore them.

The meaning of Lucas's critique can also be elucidated by the recursive structure of dynamic programming, in which an agent maximizes an objective functional defined on the space of all possible plans, subject to transition equations, one for each period, and the initial condition. An optimal plan of actions, called an optimal path of control variables in this context, is determined sequentially, in a backward manner from the last to the first period. Hence, what an agent does as part of his optimal plan in any period reflects all future transition equations. This means that if certain policies are designed now to be put into effect at a future period, they will affect the transition equation of that period, hence all decisions before and after that period. That is, any change in the future environment, as reflected in transition equations, affects an agent's optimal plan of actions over the entire planning horizon, not simply the actions after the change. The dynamic programming shows that the current and the future decisions, constituting an optimal path of controls, are all connected. If so, all those policies that change the policy regime in the future, hence shape the transition equations of the new regime, will affect what an agent does in the present even before the regime undergoes a change as long as this change is anticipated. The concept of the optimality of action plans is a forward-looking concept, hence how an agent reacts to any prospect of a policy change in the future cannot be uncovered by looking at how the same agent reacted to past policy changes. Incidentally, the idea of the dynamic programming and the backward induction makes it possible to conceive individual agents and the government authorities as the players of a dynamic game, in which the latter, knowing how the agents respond to policy changes, may choose a policy plan that is designed to bring about some desirable outcome. The agents, on the other hand, try

to meet the strategy of the authorities by choosing their best strategies, knowing how the authorities react to them. Such possibilities of dynamic game playing brings another element to the argument that the way individual agents make their decisions cannot be independent of the strategies of the government. Individual agents and the government are the players with different payoff criteria. In such game playing, there is always a possibility that the government may change their strategies any time in the future when a desirable outcome is achieved. That is, if the government is committed to a certain strategy for a while and reneges its commitment later, agents face another complication of how best to prepare themselves for this reversal. Such possibilities are the source of time inconsistency of government policies, and the issue complicates the optimal strategy on the part of individual agents (Kydland & Prescott 1977).

To sum up, what Lucas showed in this paper has changed economists' way of understanding and formulating the fundamental tenets of the decision making modes of individual agents. Since such modes are intertemporally motivated, they cannot avoid being influenced by a policy regime (i.e., by the decision making environment), in which many relevant events happen with regime-specific probabilities, uncertainties, and risks. If so, it no longer makes sense to assume that the macroeconomic structures are based on stable behavioral equations whose parameters are invariant to policy regime differences. It is not a coincidence that large macroeconometric models that had been developed for the purpose of policy evaluation and economic forecasting yielded the center stage to more process-oriented models rooted in intertemporal optimization and rational expectations. Lucas' critique shifted our attention away from the structural to the process view, with the recognition that individual agents' modes of decision making are joint products of utility and profit maximization and economic policies. Sargent expresses, in the paper cited above, how stunned macroeconomists were to read Lucas's 1976 paper.

It took us longer than we like to recall to understand how thoroughly the idea of rational expectations would cause us to change the way we did macroeconomics. Neil Wallace and I had already written several papers about rational expectations in 1969-1972, and had read drafts of Lucas's JET paper as well as two key papers by Lucas and Prescott. But we didn't understand what was going on until, upon reading Lucas's 'Econometric Policy Evaluation: A Critique' in Spring of 1973, we were stunned into terminating our long standing Minneapolis Fed research project to design,

estimate, and optimally control a Keynesian macroeconomic model. We realized then that Kareken, Muench, and Wallace's (1973) defense of the 'look-at-everything' feedback rule for monetary policy which was thoroughly based on 'best responses' for the monetary authority exploiting a 'no response' private sector – could not be the foundation of a sensible research program, but was better viewed as a memorial plaque to the Keynesian tradition in which we had been trained to work. (Sargent, 1995: 539)

Lucas' econometric policy evaluation has brought us to reckon with the fact that, in terms of the phenomenology of human consciousness and human existence, the background is as important as the foreground, and that the future, the present, and the past are the triad constituting the temporality of our decision making. While Keynesians, in forecasting the future, relied on the structural equations whose parameters are estimated from the past data, the phenomenology of the temporality of human existence informs that without anticipating what is coming, agents will not be able to capture what presences in the present including actions that might be contemplated on. More fundamentally, without expectations-protentions, human beings neither will be able to conceive anything as a temporal object nor will be able to capture anything that is coming, including any future actions, and to bring it to its fulfillment which is then recorded in memory. But, such expectations-anticipations, in the context of economic decision making, will not be possible without having some idea as to what the future environment will be like when new economic policies are introduced. Lucas' critique of econometric policy evaluation is far more than being a critique against the conventional art of econometric policy evaluation. It is a critique about how our life of actions unfolds in the midst of an environment shaped by the policies and the laws of the time. This critique, therefore, reminds us of what Aristotle, in *Nicomachean Ethics* (Book X, section 9) and *Politics*, said regarding the laws of *polis*; that is, the laws must be written in such a way as to guide individuals in their pursuit of the private goods and to make them good. Individuals act in the foreground by choosing actions to achieve their end, but, at the same time, always in the background of the laws and policies. Because human beings are teleological in their actions, the future environment in which their actions will be carried out is as important as the current environment in which their plans are made. In fact, without expectations as to what the future environment will be in relation to the current environment, intertemporal optimization is not possible. In this sense, Lucas

reawakened the profession, under the influence of Friedman and, more fundamentally we would say, of Aristotle, on how teleological agents make their rational decisions, with respect to the policy regime environment.

Monetary theory from Friedman to Lucas

Lucas wrote another stunning paper, "Expectations and the Neutrality of Money," which changed the course of economics sciences since then. The central question Lucas addressed was: How can money be nonneutral when changes in the supply of money are unanticipated or not known with certainty while it is neutral when such changes are anticipated or known with certainty, within the tradition of the quantity theory of money. Or, in terms of a possible relationship between inflation and the unemployment rate, this question can be rephrased as: How is it possible to obtain a downward-sloping Phillips curve empirically, when there are in fact no real tradeoffs between the two? The quantity theory of money dates back to Nicolaus Copernicus (1526), Martin de Azpilcueta (Salamanca School), Jean Bodin (1568), David Hume (1952), John Stuart Mill (1848), among others, and was elaborated by Irving Fisher (1911); see Granbill (2007) for late-scholastic monetary theory. The crux of the theory is that if the quantity of money is doubled, the prices of all goods double with no change in real output, since the relative prices, determined by demand and supply, remain unchanged. Hence, the theory asserts that money is neutral to real output. In this sense, money is a veil. But, Hume and others were aware that depending on the way the quantity of money is increased, money can have real effects before it regains its neutrality. Lucas, in his Nobel Memorial Lecture (1995, pp.246-247), goes back to Hume's conception on the neutrality of money, quoting from Hume's essays of 1952, *Of Money* and *Of Interest*. It is useful to recall what Lucas quoted from these essays on the issue of the neutrality of money and on the issue of possible short-run effects of money on employment and production. These quotes show what Lucas attempted to accomplish in his paper by addressing essentially the same questions but with an advantage of a mathematically formulated model that can answer many of the questions that were left unanswered in Hume's essays. Here are the quotations:

It is indeed evident that money is nothing but the representation of labour and commodities, and serves only as a method of rating or estimating them. Where coin is in greater plenty, as a greater quantity of it is required to represent the same quantity of goods, it can have no effect,

either good or bad ...any more than it would make an alteration on a merchant's books, if, instead of the Arabian method of notation, which requires few characters, he should make use of the Roman, which requires a great many (*Of Money*, p.28).

Were all the gold in England annihilated at once, and one and twenty shillings substituted in place of every guinea, would money be more plentiful or interest lower? No surely: We should only use silver instead of gold. Were gold rendered as common as silver, and, and silver as common as copper, would money be more plentiful or interest lower? We may assuredly give the same answer. Our shillings would then be yellow, and our halfpence white, and we should have no guineas. No other difference would ever be observed, no alteration on commerce, manufactures, navigation, or interest, unless we imagine that the color of money is of any consequence (*Of Interest*, p.47).

When any quantity of money is imported into a nation, it is not at first dispersed into many hands but is confined to the coffers of a few persons, who immediately seek to employ it to advantage. Here are a set of manufacturers or merchants, we shall suppose, who have received returns of gold and silver for goods they have sent to Cadiz. They are thereby enabled to employ more workmen than formerly, who never dream of demanding higher wages, but are glad of employment from such good paymasters. [The artisan] ...carries his money to the market, where he finds every thing at the same price as formerly, but returns with greater quantity and of better kinds for the use of his family. The farmer and gardener, finding that all their commodities are taken off, apply themselves with alacrity to raising more... It is easy to trace the money in its progress through the whole commonwealth, where we shall find that it must first quicken the diligence of every individual before it increases the price of labor (*Of Money*, p.38).

There is always an interval before matters be adjusted to their new situations, and this interval is as pernicious to industry when gold and silver are diminishing as it is advantageous when these metals are increasing. The workman has not the same employment from the manufacturer or merchant though he pays the same price for everything in the market. The farmer cannot dispose of his corn and cattle, though he must pay the same rent to his landlord. The poverty, and beggary, and sloth which must ensue are easily foreseen (*Of Money*, p.40).

With these quotes, Lucas asks specific questions that need to be answered. These questions ask what the central issues are when we

discuss the neutrality or the nonneutrality of money. He writes:

Humes makes it clear that he does not view his opinions about the initial effects of monetary expansions as major qualifications to the quantity theory, to his view that "it is of no manner of consequence, with regard to the domestic happiness of a state, whether money be in a greater or less quantity." Perhaps he simply did not see that the irrelevance of units changes from which he deduces the long run neutrality of money has simpler implications for the initial reaction to money changes as well. Why, for example, does an early recipient of the new money "find every thing at the same price as formerly." If everyone understands that prices will ultimately increase in proportion to the increase in money, what force stops this from happening right away? Are people committed, perhaps even contractually, to continue to offer goods at the old prices for a time? If so, Hume does not mention it. Are sellers ignorant of the fact that money has increased and a general inflation is inevitable? But Hume claims that the real consequences of money changes are "easy to trace" and "easily foreseen." If so, why do these consequences occur at all?

These questions do not involve mere matters of detail. Hume has deduced the quantity theory of money by purely theoretical reasoning from "that principle of reason" that people act rationally and that this fact is reflected in market-determined quantities and prices. Consistency surely requires at least an attempt to apply these same principles to the analysis of the initial effects of a monetary expansion or contraction. I think the fact is that this is just too difficult a problem for an economist equipped with only verbal methods, even someone of Hume's remarkable powers (Lucas, 1995: 247-249).

In the 1960s and the 1970s, the Keynesians and the monetarists were engaged in a heated debate on the effect of money or nominal demand on output. We know that the central banks in developed countries control the supply of money with the intent of stabilizing the economy. In those days, the issue of the real effects of money was controversial. How can a change in nominal demand, through a mere increase in the supply of money, affect employment and production? Keynesians, following the Hicks IS-LM paradigm (Hicks, 1937), divided the economy into two sectors: the real sector involving consumption, saving, and investment decisions, and the monetary-financial sector involving portfolio decisions of paper assets. Three elements constituted their theory: the marginal propensity to consume, the marginal efficiency of investment, and the liquidity preferences. In a nutshell, this theory implies that an increase in money supply first lowers the interest rate as an excess

supply of money is used to acquire bonds, causing their prices to rise, hence their interest rates to fall, which, in turn, increases investment to the point where the marginal efficiency of investment matches the interest rate. The effect of investment on production is then amplified by the multiplier process, which is dampened as the rise in income feeds back to the market interest rate by raising the demand for money. Money is, therefore, nonneutral to employment and production.

But, the Monetarists of the day, whose theories were based on the quantity theory of money, were developing a theory that can show that money can have real effects in the short-run while holding on to the neutrality of money in the long-run. Milton Friedman was the leading figure of the Monetarist camp. Reviving the age-old quantity theory of money and placing it under the light of theoretical and empirical monetarism, he considered agents as maximizers of utility from owning wealth, hence proposed a theory of the demand for money which treats money as one form of assets among many others, that is, as only one way of holding wealth. He also viewed money as one kind of capital for productive enterprises. For wealth-owning units, the demand for money cannot be separated from consumption and saving demand, nor from the demand for durable goods and human capital, not to mention other financial instruments such as bonds and equities; and for business firms, it is not separable from the demand for capital. Thus, the demand for money is a function of the rates of return of all assets that are alternative to holding money. In such theory, any excess money caused by an increase in money supply will be used not only to purchase various financial assets but also to buy consumption goods as well as durable goods. Production is thus affected more directly by this change, but the multiplier effect will be of a limited size since consumption is determined, according to Friedman, by permanent income (an income measure of wealth) rather than by current income. As the prices of assets and durable goods rise through an increase in money supply, their rates of return fall including the rate of return from holding capital goods (including the marginal efficiency of investment in Keynesian terms). Thus, in Friedman's theory, an increase in the quantity of money supply will spread over all financial and real assets (including durable goods and human capital) and reduce their rates of return across the board. In his theory, an increase in money supply causes the demand for durable goods (as part of the demand for all assets) to rise, hence reducing their marginal efficiency as a result, rather than lowering the interest rates in the financial market first and increasing, thereby, the demand for

investment with a consequent fall in the marginal efficiency of investment.

Friedman did not dichotomize the economy into the real sector and the monetary-financial sector as in the Hicks-Hansen IS-LM paradigm. With the stability of the market system as well as with the stability of the demand for money, which is based on wealth in the long-run, short-run changes in the money supply can cause the economy to flutter in terms of real output, but such changes dissipate in the long-run when the rates of return on all assets are adjusted. If money supply is increased on a perpetual basis, it will lead to higher inflation (with possible adverse effects on the economy to the extent the future is made more uncertain); if increases in money supply are fully anticipated with no added uncertainty into the future, there will be no real effects of money in the long-run, where real forces of the economy determine the whereabouts of equilibrium although such equilibrium is not an ideal one captured by the Walrasian equilibrium. Friedman's monetarism is related to his theory of the natural rate of unemployment. If an increase in the quantity of money supply is to have some positive effect on employment and output, the equilibrium in the labor market requires that the real wages paid by firms be made lower while the expected real wages the workers anticipate be made higher. But, such conditions cannot be met unless the price level is allowed to change. If the price level changes in response to an increase in money supply, and if a gap is created between the actual inflation (which determines the real wage offer by firms) and the expected inflation (which enters the calculation of the expected wages conceived by workers), then there will be a temporary increase in employment and output. Such an increase is short-lived as the expected inflation catches up with the actual one. The unemployment rate and production, therefore, return to their natural rates. Such was Friedman's theory of the Phillips curve. Whatever changes are caused by money supply in employment and output (which is possible under Friedman's expanded theory of the demand for money), such changes will be nullified in the long-run as the equilibrium of the economy is restored at the natural rate of unemployment.

Before leaving this debate between the Keynesians and the Monetarists, it is useful to review the quantity theory of money and Friedman's monetary theory since they occupy the central place in Lucas's theory of expectations and the neutrality of money. The quantity theory has been expressed in different forms, but we trace it through Friedman's formulation. The transactions version (Fisher, 1911), which became popular, was expressed as follows:

$$MV = PT \tag{1}$$

where P is a suitably chosen average price; T is again a suitably chosen aggregate volume of transactions per unit time; M is the stock of money; V is the velocity of circulation of money (the number of turnovers per unit time). The right side PT measures the total nominal value of the payments per unit time, and the left side MV measures the total nominal value of the turnovers per unit time (how many times the stock of money turned over per unit time). This equation is also written in the income form as

$$MV = Py \tag{2}$$

where P is the implicit GDP deflator; y is real GDP. Py , therefore, is nominal GDP. The left side measures the nominal value of the stock of money turned over V times. While the transactions version includes all transactions including those involving intermediate goods and existing financial and real assets, such transactions are excluded from the income version. Also, while the transactions version focuses on money transferred from one hand to another in all transactions, the income version focuses on the amount of money held by agents as a whole.

The quantity theory of money has also taken a form after the Cambridge cash-balance approach, which emphasizes money as an abode of the purchasing power held in between the sale and the purchase of goods and services. This approach, therefore, writes how much agents (households and firms) want to hold of this purchasing power as

$$M = kPy. \tag{3}$$

Written this way, k stands for the ratio of the stock of money to nominal GDP. This k can be interpreted either as the ratio that is calculated from the stock of money and nominal income, so that (3) holds as an identity, or as the desired ratio, in which case M is the stock of money that agents want to hold. If form (2) is compared with form (3), it is seen that $k = 1/V$, where if k denotes the desired ratio, V must denote the desired velocity (how many times agents want to turn over their money stock). See Friedman (1970, pp.195-202) for the difference between the transactions approach and the cash-balance approach.

Friedman lists a number of factors that affect the demand for money of wealth holders: (1) total wealth, which is divided into various forms of assets, where income as a surrogate of this wealth is better served by the concept of permanent income since this income is, by definition, the interest return on wealth, (2) the division of wealth between human and nonhuman forms, where the fraction of total wealth in the form of nonhuman wealth can be an important factor, (3) the expected rates of return on money and other assets (interest rates on bonds, dividends on equities, storage costs on physical capital, and changes in their nominal prices due to inflation or deflation), and (4) other variables that determine the utility of the services that money renders, i.e., the utility value of the liquidity that money provides. With these factors taken into account, Friedman (1970) writes the demand for money by an individual wealth holder as

$$\frac{M}{P} = f\left(y, w; r_m, r_b, r_e, \frac{1}{P} \frac{dP}{dt}; u\right) \quad (4)$$

where M/P stands for the money stock in real terms; y is real income; w is the fraction of wealth in non-human form; r_m is the expected nominal rate of return of money; r_b is the expected nominal rate of return of fixed-value securities (that includes expected changes in their prices); r_e is the expected nominal rate of return on equities (the includes expected changes in their prices); $(1/P)(dP/dt)$ is the expected rate of change of the prices of goods (hence, the expected nominal rate of return of real assets); u is a portmanteau term for all other variables that affect the utility services of money (Friedman 1970, pp.202-205). The money demanded by business enterprises is affected by another set of factors. While some are shared by the money demanded by individual wealth holders, others are specific to enterprises. Instead of wealth, some scale factor reflecting the productive value of different quantities of money may be important for enterprises, although data on such factor are difficult to obtain; the division of wealth between human and nonhuman wealth is of little relevance for enterprises; rates of return on money and alternative assets, particularly the interest rates on bank loans, are important; the portmanteau term u includes again all other variables other than the scale factor but including expectations about the economic stability. With such modifications, the demand function (4) with w excluded may be viewed as representing the demand for enterprises (Friedman 1970, pp.205-206). When the two demand functions are aggregated, the aggregate demand for money is H.Hayakawa (2019). *Rational Expectations and...*

obtained.

If the demand for money is expressed in nominal terms as

$$M = g(P, r_b, r_e, \frac{1}{P} \frac{dP}{dt}; w; Y; u), \quad (5)$$

and if this function is homogenous of degree one in P and Y , (5) can be written in real terms as

$$\frac{M}{P} = g(r_b, r_e, \frac{1}{P} \frac{dP}{dt}; w; \frac{Y}{P}; u). \quad (6)$$

This is essentially the real demand for money specified in (4). The same homogeneity also gives

$$g(\frac{P}{Y}, r_b, r_e, \frac{1}{P} \frac{dP}{dt}; w; 1; u) = \frac{1}{Y} g(P, r_b, r_e, \frac{1}{P} \frac{dP}{dt}; w; Y; u). \quad (7)$$

With the right side written as M/Y , (7) gives

$$\frac{M}{Y} = g(\frac{P}{Y}, r_b, r_e, \frac{1}{P} \frac{dP}{dt}; w; u) \quad (8)$$

where $Y = 1$ is subsumed. If (8) is written as

$$\frac{M}{Y} = g(\frac{1}{y}, r_b, r_e, \frac{1}{P} \frac{dP}{dt}; w; u) = \frac{1}{v(y, r_b, r_e, \frac{1}{P} \frac{dP}{dt}; w; u)} \quad (9)$$

where $1/y$ in $g(\cdot)$ is replaced by y in $v(\cdot)$, we have

$$Y = v(y, r_b, r_e, \frac{1}{P} \frac{dP}{dt}; w; u) \cdot M. \quad (10)$$

This shows that writing the real demand for money as in (6) is essentially identical to writing the income velocity of circulation as depending on the same variables. Friedman held that the demand for money function is stable because it is part of long-run considerations focused on wealth. This stability then translates into the stability of the income velocity of circulation. The stability of the demand for money implies that any money in excess supply will affect the demand for all assets (not just the demand for financial assets) and physical goods, hence production of goods. All of the variables that enter into the demand for money are endogenously determined in the asset market, although how expectations are formed with respect to the market equilibrium

remained unsettled in his theory despite the fact that expectations play a vitally important role in the demand behavior of wealth-owners and enterprises. Friedman considered the demand for goods and assets, (i.e., demand for whatever is relevant for economic activities) as different phases of the same decision making in contrast to a segmented approach taken by the Keynesians. In Friedman's view, all decisions brought to the foreground are made in the background of interrelated decisions pertaining to all goods and assets, and this view has set a stage for the role of expectations to be played in all decisions of economic agents. Furthermore, his theory called for a certain rule of money supply so that future prices will be stable enough to allow agents to form reliable expectations they need for their planning purposes. The rule is known as the k -percent rule (Friedman 1959, 1962, 1968).

The quantity theory of money is based on the idea that elementary events in the economy are transactions. If all transactions are recorded as payments and receipts, we should be able to get the nominal value of all transactions. If money changes hands in such transactions, the question is how many times money changes hands per unit time, which gives the velocity of circulation. Whether this is expressed in terms of transactions or income, the idea is the same, although, in the case of income, we are focused on how many times money changes hands in transactions involving only final goods rather than all goods (final and intermediate) and all assets (physical and financial).

On top of this function of money as a medium of exchange, money performs another function, as a store of value. Money serves as a contrivance like a social security, that makes it possible for agents to carry their savings, stored as money, from their productive years to the future when they are no longer working. The idea of money as a store of value was already recognized by Aristotle in *Nicomachean Ethics* (Book V, 1133b). Samuelson (1958) wrote an influential paper on how the overlapped generations of the young and the old can trade to get an optimal lifetime consumption when goods produced are perishables. The young produce goods, part of which are sold to the old in exchange for the money they hold, and money acquired is then taken to the future, when this money is used to buy goods produced by the young then. In this paper, Samuelson showed that if money is introduced, the non-optimal negative-interest-rate configuration (of a free market) can be restored to the optimal biological-interest-rate configuration, without requiring any social security scheme or any other social compact. Thus, money serves as a contrivance that brings about the socially optimum configuration in a free market. It

goes without saying that money serves as a store of value because it is accepted as a medium of exchange. Lucas, in his paper on expectations and the neutrality of money, modeled a monetary economy inhabited by the overlapped generations of the young and the old after Samuelson’s paper.

Lucas, in the same paper, also analyzes a fixed growth rate rule of money supply called the *k-percent* rule, which was proposed by Milton Friedman (1959, 1962, 1968). Friedman, with Anna Schwartz, studied the monetary history of the United States, which culminated in a magnificent piece of work, *A Monetary History of the United States, 1867-1960* (1963). In this work, they examined how monetary expansion or contraction was related to economic expansion or contraction, and showed the cases of misguided monetary policies. See, in particular, chapter 7 of the book titled *The Great Contraction*, for an episode, and also Timberlake (2008). With this track record of the policies of the Federal Reserve in view, Friedman advocated that money supply be guided by a fixed rule that is consistent with the growth rate of the economy. Whether the Fed’s policy should be guided by a fixed rule or a discretionary policy is a matter of great controversy, but the fact remains that Friedman’s *k-percent* rule was the first serious suggestion as a rule-based policy. There has been a burgeoning literature on monetary policy rules, particularly after 1990s. John Taylor (1993) introduced what has come to be known as the Taylor rule; Henderson & McKibbin (1993) also introduced a similar one. The Taylor rule is a feedback rule on the interest rate, which requires that the interest rate be adjusted, partly by a fraction of the deviation of the actual inflation from the target level and partly by a fraction of the deviation of actual real GDP from its trend level. In the United States, the Federal Open Market Committee (FOMC) of the Federal Reserve, through open market operations, adjusts the federal funds rate. Taylor, having observed the Fed’s actions for several years, noted that they can be approximated by the rule:

$$\begin{aligned}
 r &= p + 0.5y + 0.5(p - p^*) + r^* \\
 &= p + 0.5y + 0.5(p - 2) + 2
 \end{aligned}
 \tag{11}$$

where r is the federal funds rate (the interest rate that banks charge each other for overnight loans to meet the reserve requirement); p is the inflation rate and p^* is the target inflation rate; y is the percentage deviation of real GDP from its trend; r^* is the steady state equilibrium real federal funds rate. Taylor sets $p^* = 2$ and $r^* = 2$. Under this rule, if the inflation rate deviates one percent

from the desired rate, the federal funds rate is set higher by 50% of this deviation; if the real GDP deviates from the potential GDP by one percent, again the federal funds rate is set higher by 50% of the deviation. With such adjustment, the Fed tries to keep the economy growing along the long-run trend (the steady state growth path) and with the inflation close to the target rate. The Taylor rule may not be completely rule-based, since how much the policy interest rate should be adjusted and when to do so are still left to the discretion of the monetary authorities. See Taylor (1998) for a history of monetary policy rules. As long as the authorities are vested with discretionary power, there always is some possibility for economic agents to end up paying a high cost of adjustment as well as for the fluctuations of the economy to worsen, because of mismanaged monetary policies. We need to keep in mind that the Taylor rule is not a rule derived from optimality considerations; it is a rule that is based on the observation of what the monetary authorities actually pursued. Friedman's rule, on the other hand, does not leave much room for discretion except when the *k-percent* itself is revised because the long-run growth rate is changed. Rather it is derived from the optimality considerations in the sense that mismanaged monetary policies have created unnecessary swings in the economy and that such swings have been costly to economic agents in general. Lucas took this rule and showed that there does not exist any other feasible allocation that is Pareto-superior to the one obtained under the rule. In summary, at the time Lucas wrote his 1972 paper, many questions were awaiting answers. Some of these questions were: (1) how to incorporate rational expectations into intertemporal equilibrium models in order to endogenize expectations through such models; (2) how to analyze the neutrality or the nonneutrality of money from the perspective of the quantity theory of money; (3) how to model intertemporally motivated agents and relate their real decisions (production, consumption, saving, investment, etc.) to their decisions on asset holdings (in particular, how to integrate the demand for money with the demand for consumption and saving); (4) how to model a monetary economy in which monetary disturbances and real disturbances (i.e., innovations of all kinds) coexist and are mixed, and in which a Phillips curve type relation may be observed in appearance between the unemployment rate and the rate of inflation despite the fact that there are no tradeoffs between the two; and (5) how to evaluate monetary policies including Friedman's *k-percent* rule from optimality considerations. All of these questions, as well as Friedman's innovative approach to the decision making of economic agents, make so much more sense in

relation to the phenomenologies of Husserl and Heidegger. The temporality of the inner time consciousness and the temporalized temporality of human existence disclose the truth that we are conceiving any thing or any action not only in the horizon of past, present, and future but also in the continuous unities of all temporal objects and decisions. Aristotle's ethics, with all its phenomenological implications, is equally very much alive in the normative approaches taken by Friedman and Lucas and in the trust they placed on free decisions made by individual agents and the market system.

Lucas attempted to answer these questions by constructing a parable economy in which agents, observing equilibrium market prices, cannot separate monetary from real disturbances as long as they are mixed. The model is based on the idea that while the general equilibrium of the economy is determined by relative prices, the absolute price level depends on the quantity of money supplied. If no real shocks occur, we will expect that the greater is the quantity of money supplied, the higher will be the prices in the market, but with relative prices remaining unchanged, hence with no change in the equilibrium of the economy. This is the neutrality proposition of the quantity theory of money. But, if real shocks are added, the relative prices of goods can change under a fixed growth rate of money supply, hence the equilibrium is affected. If monetary disturbances are added on top of real shocks, agents, who are observing market prices, will not be able to separate relative from absolute price changes. If so, agents will be forced to hedge against the possibility that the market price changes may have been caused by real shocks. Such hedging will result in producing more output as market prices rise, since agents can now exchange the goods they produce for more money to be taken to their future periods for consumption purposes. If agents know that money supply is fixed or grows at a fixed rate, then any change in market prices can be attributed to real shocks. But, if agents observe the market prices alone and if information on the amount of money supplied is disclosed with a time lag, then they will not be able to isolate real from nominal shocks while they are making decisions in the short-run, hence will be forced to hedge against the possibility that the observed price rises are due to real shocks. This is basically the story of the Lucas's parable model. In constructing his model, Lucas integrated decisions on the demand for money with the decisions on production, consumption, and saving, and allowed the equilibrium in the money market to emerge with the equilibrium in the goods market. His model, in this sense, is very much in accord with Friedman's insight that monetary and real

decisions cannot be separated from each other. Now we turn to Lucas's theory of expectations and the neutrality of money, and elucidate his contributions in more precise terms.

Lucas's theory of expectations and the neutrality of money

To model how hedging can occur when the market equilibrium prices are confounded, Lucas constructed a model of a monetary economy which is inhabited by two overlapping generations in each period, the young and the old. Money is a fiat money issued by the government, and serves as a contrivance to carry one's saving into the future when goods produced are all perishables.

It is assumed that in each period, a new generation is born and lives for two periods, and that there are N individuals in each generation. Hence, two generations of the same population size coexist in each period. The young work and the old do not. The young do not have money but the old have. The young consume a portion of what they produce and sell the rest to the old in exchange for the money they have, and carry this money into their second period when they no longer work. The old only consume, buying a portion of the goods that the young produce, with the money they acquired when they were young. In per-capita terms, the young decide on how much to work (denoted n), consume (denoted c), and save (denoted s). What the young save is purchased by the old, exchanged with the money they have. The amount of money that the young desire to carry to their second period (denoted λ), must be equal to the saving s , so that the demand for money by the young and their saving are equal, i.e., $\lambda = ps$ where p is the market price of the goods in the first period. This equality follows Friedman's theory of the demand for money; namely, the decisions on demand for money and the decisions on saving and consumption are derived from the same optimization decisions. The young take this money to their second period and spend it in exchange for consumption goods produced by the young then under the market price that prevails then (denoted p').

The young generation is divided randomly into two groups, one group sent to Island 1 and the other to Island 2; $\theta/2$ and $1-\theta/2$ are the factions of this generation going to Island 1 and Island 2, respectively, where θ is a random variable defined on the domain $[0, 2]$. The stock of money that the old generation has per capita at the beginning of each period is given by m , so that the total stock of money that the old have as a whole amounts to Nm . One half of

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the old generation is sent to Island 1 and the remaining half is sent to Island 2, so that the total stock of money in each island at the beginning of the period equals $Nm/2$. The demand for money by the young is determined by the equi-marginal principle that the marginal utility of acquiring a dollar in terms of the forgone utility of consumption in the first period is balanced with the expected marginal utility of this money when spent in the next period, in terms of the utility of consumption in the second period.

In Lucas's model, there are two types of shocks. One is shocks in the form of a randomly selected distribution of the newly born generation (the young generation) between the two islands, captured by θ , and the other is nominal shocks in the form of a randomly selected gross rate of money supply, x for the first period and x' for the second. At the beginning of each period, the nominal stock of money that the old possess per-capita is assumed known (that is, m is known), but, the intra-period amount of money (how much money there is actually in each period in the market) is not known perfectly since this stock is changed randomly by x (in gross rate terms) during the period and this x is not announced at the beginning of the period. Hence, the actual stock of money in the market (per capita of the old) this period equals mx . This quantity can only be guessed by observing market equilibrium prices. Unrealistic as Lucas' model may appear at first sight, it does capture the essence of the real economy, in which agents are producing in their own industries facing specific real shocks. As profit maximizers, they are guided by relative prices determined by the demand and the supply, but the quantity of money the central bank provides determines the general price level across industries. Hence, the prices in the industries reflect both the quantity of money supplied by the central bank and real shocks that are industry-specific (that is, real changes in the demand or in the supply). When producing agents find their prices rising, they may not be able to tell immediately whether such changes are relative price changes (relative to the prices of other industries) or overall price changes caused by an increase in money supply. When relative prices of the goods produced in specific industries rise, profit maximization requires that more output be produced, but if all prices change more or less proportionately across all industries, there should be no change in the amount produced in each industry. Thus, Lucas's model, as a fable, captures the confounded nature of market equilibrium prices in a monetary economy, that is, confounded of relative and absolute prices; the changes in the former are caused by either supply or demand shocks (i.e.,

technological innovations or preference changes), and the changes in the latter are caused by the supply of money injected by the central bank.

Lucas formulates the decisions of a newly born agent as an intertemporal optimization problem over two periods. In his first period, the agent works n hours, each hour producing one unit of output. The total output (n) is partially consumed (c) and partially saved (s). The saving is exchanged with money that the old have under market price p , so that the demand for money (λ) by the young is equated to their saving by $\lambda = ps$. The young, when they get old, consume c' . The objective functional (the utility functional) is, therefore, defined on a triplet $\{c, c', n\}$, and this functional is, by assumption, broken down into two components; one is the utility that depends on consumption and labor in the first period, denoted $U(c, n)$, and the other is the expected utility from consumption in the second period, denoted $EV(c')$ (where E stands for the expected value). Since c' equals the amount of consumption that the young can afford with their money balances carried to the second period, it must hold that $c' = x'\lambda/p'$. Variables x' and p' are random variables, but the young knows the stock of money m at the beginning of the first period and can observe the market price p in the same period. Hence, what we need in order to compute $EV(c')$ is a probability distribution of x' and p' conditional on m and p . Let this conditional probability distribution be written as $F(x', p'|m, p)$. With this distribution, $EV(c')$ is calculated as

$$EV(c') = \int V\left(\frac{x'\lambda}{p'}\right) dF(x', p'|m, p) \tag{12}$$

where the right side is integrated over the domain of x' and p' .

A newly born agent then maximizes $U(c, n) + EV(c')$ subject to the budget constraint $p(n - c) \geq \lambda$. That is, this optimization problem can be written as

$$\max_{c, n, \lambda} U(c, n) + \int V\left(\frac{x'\lambda}{p'}\right) dF(x', p'|m, p) \tag{13}$$

subject to: $p(n - c) \geq \lambda$.

Assuming that the solutions of c , n , and λ are interior, and letting $h(\lambda/p)$ represent the marginal utility of consumption this period, i.e., $U_c(c(\lambda/p), n(\lambda/p))$, where c and n are written as functions of λ/p (because for each level of λ/p there corresponds a

unique combination of c and n that maximizes $U(c, n)$, the following optimality condition is obtained.

$$\frac{1}{p} h(\lambda/p) = \int V' \left(\frac{x'\lambda}{p'} \right) \frac{x'}{p'} dF(x', p' | m, p) \tag{14}$$

The marginal utility of one dollar spent on consumption this period is equated with the marginal utility of this dollar brought to the next period and spent on consumption then. This is the equi-marginal principle holding in this model.

On the other hand, the equilibrium condition of money demand and money supply is given by

$$\lambda = mx/\theta$$

where the right side is money supply per capita of the young in island 1, which is obtained by dividing the total money supply $Nmx/2$ by the population of the young in island 1, $N\theta/2$. The equi-marginal principle (14), under this market equilibrium condition, can, therefore, be written as

$$h \left(\frac{mx}{\theta p} \right) \frac{1}{p} = \int V' \left(\frac{x' mx}{\theta p'} \right) \frac{x'}{p'} dF(x', p' | m, p). \tag{15}$$

Lucas assumes that the market equilibrium price in the first period (a random variable) is given as an objective function of the state of the economy (m, x, θ) , and write it as

$$p = p(m, x, \theta). \tag{16}$$

Likewise, the market equilibrium price in the second period should be given as

$$p' = p(m', x', \theta') = p(mx, x', \theta'). \tag{17}$$

This is also a random variable with an objective distribution of x , x' , and θ , conditional on the price observed this period, $p(m, x, \theta)$, and m . Write this distribution as $G(x, x', \theta | m, p(m, x, \theta))$.

The idea of rational expectations consists in assuming that the price is determined by $p = p(m, x, \theta)$ and in replacing $F(x', p' | m, p)$ with an objective distribution $G(x, x', \theta | m, p(m, x, \theta))$. The quantity theory of money, on the other hand, suggests that the equilibrium price in the first period be

determined by the per capita stock of money mx/θ . Hence, the solution $p = p(m, x, \theta)$, under rational expectations, is expected to take a general form of $\phi(m, x/\theta)$. One particular form of this function considered by Lucas is $\phi(m, x/\theta) = m\varphi(x/\theta)$. The per capital stock of real balances at equilibrium will then be $(x/\theta)/\phi(x/\theta)$ (since $mx/\theta p = (x/\theta)/\varphi(x/\theta)$). Hence, with both sides multiplied by mx/θ , and by letting $z = x/\theta$ and $z' = x'/\theta'$, (15) can be written as (with m subsumed).

$$h\left(\frac{z}{\varphi(z)}\right)\frac{z}{\varphi(z)} = \int V'\left(\frac{\theta'}{\theta}\frac{z'}{\varphi(z')}\right)\frac{\theta'}{\theta}\frac{z'}{\varphi(z')}dG(\xi, x', \theta'|x/\theta) \quad (18)$$

Writing the joint density function of z and θ as $H(z, \theta)$ and the density function of θ conditional on z as $\tilde{H}(z, \theta)$ allows (18) to be written as:

$$h\left(\frac{z}{\varphi(z)}\right)\frac{z}{\varphi(z)} = \int V'\left(\frac{\theta'}{\theta}\frac{z'}{\varphi(z')}\right)\frac{\theta'}{\theta}\frac{z'}{\varphi(z')}\tilde{H}(z, \theta)H(z', \theta')d\theta dz'd\theta' \quad (19)$$

Then, Lucas proved that (19) has exactly one continuous solution $\varphi(z)$ on $(0, \infty)$ such that the stock of real balances $z/\varphi(z)$ is bounded, strictly positive, and continuously differentiable, and that $p(m, x, \theta) = m\varphi(x/\theta)$ is the unique equilibrium price function, which is a unique rational expectations equilibrium function; see his Theorem 1.

If the equilibrium price function is given by $\phi(m, x/\theta) = m\varphi(x/\theta)$, then, the young agent, having observed the per-capita stock of money m should be able to tell that an increase in the market price must have been caused by an increase in either m or x/θ or both. But, the effect of x/θ cannot be separated into two isolated effects, one attributed to x and the other to θ . If so, the agent is forced to hedge against the price change that may have been caused by a change in θ . If agents know that the price change is entirely due to an increase in money supply (x), then their decisions on how many hours to work and how much to consume and save will remain the same as before the price change. That is, if the young, with this knowledge, have decided to save a certain amount for their second period, then this saving will inflate at the same rate as the price, hence, there is no reason for them to change the amount to be saved. If the saving does not change, neither do labor and consumption. Thus, the neutrality of money comes through as long as x is known with certainty. But, if the young do

not know whether the price inflation was caused by an increase in money supply (a change in x) or by a real shock (a change in θ), they end up increasing their working hours, reducing consumption, and increasing saving to take advantage of the higher price (but not as much as when they know that a price increase is caused entirely by a real shock). Or, in more general terms, depending on what they know or do not know about what is causing the price increase, the decisions of the young will be affected or not affected. All this suggests that the monetary authorities are not in a position to influence the decisions of the young in favor of more output on a consistent basis because it is only through the confounding of the real and nominal shocks that the young produce more and because such confounding will disappear if the authorities engage in an inflationary policy on a persistent basis. No authorities will rely on such confounded information to affect the level of production.

On the issue of whether a Phillips curve offers a trade off between inflation and unemployment in the long-run, Milton Friedman proposed a theory that the unemployment rate returns to its natural rate when adaptive expectations catch up with the actual inflation rate (the natural rate hypothesis). If a short-run Phillips curve is drawn with the expected inflation rate fixed, it shows that any reduction in the unemployment rate below the natural rate, caused by expansionary monetary shocks, is accompanied by the actual inflation rate exceeding the expected one. Therefore, under adaptive expectations, the short-run Phillips curve shifts upward, causing the actual inflation to get ahead of the expected once again. When the latter catches up with the actual, the unemployment rate returns to its natural rate with no gains in employment. If the unemployment is to be kept below its natural rate, an ever expansionary money supply is needed, but that implies that the gap between the actual and the expected inflation rate will never close, hence accelerating the inflation rate. Thus, any persistent attempt to reduce the unemployment rate below its natural rate will not succeed; it only causes inflation to accelerate. This is Friedman's view of the Phillips curve (Friedman 1968). His theory warns that any expansionary policy that is not consistent with the natural rate of unemployment will only end up with an accelerating inflation with no gains in employment or output. In contrast, Lucas, in this paper, constructed an equilibrium model under rational expectations, in which randomized monetary shocks can have real effects in the short-run through hedging on the part of producing agents who observe market equilibrium prices that are confounded. Such effects dissipate as the producing agents get hold of enough information that informs them of the exact state of money supply.

Notice that the notion of rational expectations does not negate the effects of an unanticipated increase in money supply. It is possible for money to be non-neutral under rational expectations in Lucas's island model, when agents, even with rational expectations, cannot isolate real from nominal price changes. In Lucas' model as well as in Friedman's theory, the effectiveness of monetary policies to reduce the employment rate below its natural rate, or, equivalently, to raise the level of real GDP above its natural output, is seriously compromised.

Lucas considered two special cases, Case 1: $\theta = 1$, i.e., when the young generation is divided equally between the two islands, and Case 2: $x = 1$, i.e., when the money supply remains fixed. In the first case, there exists the amount of money balances y^* such that the marginal utility of consumption as a function of real balances is equalized between the two periods, i.e., $h(y^*) = V'(y^*)$ (because $h(\lambda/p)$ is an increasing function starting with $h(0) > 0$, and because $V'(\lambda'/p')$ is a decreasing function with $V'(0) = \infty$.) It can be shown that the equilibrium price function $p(m, x, \theta = 1) = m\varphi(x/y^*) = mx/y^*$ makes y^* a feasible choice in both periods because it holds that $mx/p = m'x'/p' = y^*$, and that this equilibrium price function also satisfies the equi-marginal principle, hence is unique. The same equilibrium function also implies that the real balances that the young take to the second period equals y^* . If so, labor (production) and consumption remain the same. Thus, if $\theta = 1$, a change in x changes the equilibrium price function proportionally, i.e., $\Delta p = (m/y^*)\Delta x$, and labor (production), consumption, saving, and real balances (taken to the second period) all remain constant. That is, monetary shocks (x) remain neutral to the young agents' real decisions.

The other special case that Lucas considers is the case in which $x = 1$, i.e., when the money supply remains fixed. There the equilibrium price function takes the form of

$$p(m, x, \theta) = m\varphi(1/\theta). \tag{20}$$

Since m is known, this market price informs the agents about the true value of θ . The real balances that the young agent takes to the second period equals

$$\frac{\lambda}{p} = \frac{mx/\theta}{m\varphi(x/\theta)} = \frac{a}{\varphi(a)} \text{ where } a \equiv 1/\theta, \tag{21}$$

so that how this amount changes in response to a change in θ depends on the elasticity of $\varphi(a)$. In Lucas's model, this elasticity lies between 0 and 1, so that the amount carried falls with a rise in θ , which implies that labor (production) decreases and consumption rises. What happens in Lucas's model is that as the number of the young sent to Island 1 increases, the price of consumption of the first period falls in Island 1, which implies that it takes more units of consumption of the first period to get a unit of consumption of the second period. With this rise in the price of the second period consumption, there will be less incentives for production and saving; that is, labor (production) falls, consumption increases, and saving falls in the first period: i.e., $n'(\theta) < 0, c'(\theta) > 0,$ and $s'(\theta) < 0$ where the prime denotes the derivatives.

Such responses of labor, consumption, and saving to productivity shocks θ are not what we expect from real shocks in an actual economy, for such shocks make it possible to produce more income, which can be allocated to raise consumption over the planning horizon. This rather counter intuitive outcome in Lucas's model results from a particular feature of Lucas's model. In fact, if more universal productivity shocks are allowed in Lucas's model which apply to both islands, then the agents in each island respond positively to them by raising production, consumption, and saving, and will be able to attain the higher level of lifetime utility.

Friedman's k -percent rule is a special case, in which the gross rate of change in money supply x remains fixed at a prefixed value, say, at \bar{x} , so that in the context of Lucas's model the real balances carried to the next period by the young equals

$$\frac{\lambda}{p} = \frac{m\bar{x}/\theta}{m\varphi(\bar{x}/\theta)} = \frac{\bar{x}}{\varphi(\bar{x}/\theta)}. \tag{22}$$

Again, how this amount changes with θ depends on the elasticity of $\varphi(\bar{x}/\theta)$. As long as this elasticity lies between 0 and 1, we get the same results as when $\bar{x} = 1$; i.e., $n'(\bar{x}/\theta) < 0, c'(\bar{x}/\theta) > 0,$ and $s'(\bar{x}/\theta) < 0$.

The major point made by Lucas is that if x and θ random variables, the market equilibrium price function $p(m, x, \theta) = m\varphi(x/\theta)$ cannot fully inform the young about what is really causing the price changes observed in the market. Such confounded information causes hedging on the part of the young; that is, the young increase labor (production) and saving and reduce consumption in the first period. That is, the young attempt

to balance the marginal utility of consumption across the two periods under this mixed information. If the market equilibrium price is imperfect in this sense, the economy of Island 1 produces more output when prices rise and less output when prices fall. We note that when θ increases so that a larger fraction of the young is sent to Island 1, Island 2 receives a smaller fraction of these agents. Output increases in Island 1 but falls in Island 2. If x stays constant at 1, the price falls in Island 1 with labor (production) and saving decreasing and with consumption increasing. On the other hand, the price increases in Island 2 with labor (production) and saving increasing and with consumption decreasing. In general, the combined aggregate output of the two islands, $\Pi(\theta)$, amounts to

$$\Pi(\theta) = \frac{\theta}{2}N(n(\theta) + \left(1 - \frac{\theta}{2}\right)N\hat{n}(\theta)$$

where \hat{n} is labor in Island 2. This indicates that whether the aggregate output increases or decreases with a change in θ depends on the relative magnitudes of the derivatives of the two terms on the right side with respect to θ .

If we extend Lucas's model to a Phillips curve type relationship, we would observe there will be an inverse relationship between inflation and output growth. It should be noted that in Lucas's model it is not possible to relate the inflation to the unemployment rate simply because every agent is engaged in production in the first period. At any rate, such a hypothetical Phillips curve does not offer us any sustainable tradeoff between inflation and output that policy makers can rely on, even if the monetary authorities keep the information of money supply secret from the public. In fact, Lucas's island model can generate data that will confirm the existence of a Phillips curve type relationship, but this relationship is elusive, for it is not possible to increase output by running inflation in the long-run. The augmented Phillips curve theory of Friedman and Phelps negated the existence of a long-run tradeoff between inflation and output under adaptive expectations. Lucas equally negated the existence of a similar tradeoff under rational expectations. In the former theory, output rises above its natural level provided that adaptive expectations lag behind the actual inflation rate, but output returns to its natural level when expectations are fully caught up. If expectations were formed rationally in the Friedman-Phelps model, it would not be possible for expectations to lag behind the actual inflation rate, because the real wages that firms are willing to pay match the real wages that

workers expect. This implies that output remains at its natural level under rational expectations in their context. In Lucas's model, production also returns to its natural level, if this is defined as the level of output that would obtain when monetary disturbances are completely known to the agents. Output can differ from this natural level as long as monetary disturbances are not fully known. In both models, it is only unanticipated price changes that can cause the economy to deviate from its natural output.

Because Lucas's model made it explicit how output changes in response to shocks θ under rational expectations, his model was the beginning of a series of subsequent efforts that attempted to capture the movement of the economy as a stochastic process that is driven by shocks, real or monetary. These efforts culminated in real business cycle theory, particularly after the publication of Kydland & Prescott's seminal paper (1982) as well as in time-series studies testing the presence of a unit root in aggregated variables such as aggregate consumption and even the gross domestic product (Hall, 1978; Nelson & Plosser, 1982).

Lucas also addressed an important normative question on whether or not Friedman's *k-percent* rule is Pareto optimal. If the monetary authorities follow a rule, agents know ahead of time what policies will be pursued in the future, hence can make intertemporal plans without the risk of being surprised. On the other hand, if the authorities change their policies at their discretion, agents will be forced to revise their plans every time such changes are made, and the cost of this revising will not be negligible. More importantly, discretionary policies increase the uncertainty of the decision making environment, thereby making the agents' planning unnecessarily difficult. As pointed out above, Friedman & Schwartz (1963), through their extensive study on the monetary history of the United States, gave episodes of misguided monetary policies. Lucas's proof of the optimality of the *k-percent* rule proceeded by showing that if there were any feasible allocation, say a triplet $(n(\theta), c(\theta), c'(\theta))$ (where $c'(\theta)$ is the consumption per capita of the old), which is assumed to be Pareto superior to the optimal solution $(\bar{n}(\theta), \bar{c}(\theta), \bar{c}'(\theta))$ that obtains when the *k-percent* rule (i.e., $\bar{x} = 1 + k$) is followed, such an allocation necessarily contradicts the Pareto optimality condition itself.

Lucas's proof suggests that discretionary policies of any sort will not bring about an equilibrium allocation that is Pareto-superior to what obtains under a fixed rule. Such policies always disorient economic agents as the authorities flutter on their previous commitment and start something new. Faced with

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unforeseen policy changes, agents must protect themselves against unpredictable changes. To make the matter worse, while the authorities are held accountable for their policies, it is not clear how effective their new policies will be for the situation at hand. In the case of monetary policies, there is always a lag before their effect shows up one way or another. In the face of such difficulties, the monetary authorities may be wise to adopt a rule by looking at the growth trend of the economy and supplying money at a rate consistent with this trend. Friedman's *k-percent* rule is intended to eliminate the uncertainty that the monetary policies may create. Elimination of such uncertainty allows agents to focus on real shocks or changes in relative prices. As Schumpeter (1942) has convincingly argued, innovations are the sources of the dynamic growth of capitalist economies. Because capitalist economies use money as a medium of exchange, the most important task of the monetary authorities is to supply money without creating unnecessary disturbances, so that the decisions made by individual agents in response to real innovations may be close to being optimal. In the case of Lucas's model, this amounts to eliminating the confusion between nominal and relative prices.

Further discussion of Lucas's contributions in relation to the phenomenologies of consciousness and existence

We have examined the rational expectations equilibrium theory in relation to Husserl's phenomenology of the internal time consciousness and Heidegger's phenomenology of human existence, that preceded it by several decades, as well as to Aristotle's ethics. This theory, as we traced through Friedman, Muth, and Lucas, is founded on three ideas: (1) the notion of intertemporal optimization as a principle that permeates through all decisions made by economic agents; (2) the idea of expectations that are formed endogenously in relation to the market equilibrium in getting foresight as to what will be the most likely state of the market that results from decisions made by individual agents; and (3) the idea that the decision making modes are intertwined with the economic environment, particularly with a politico-economic policy regime. The notion of intertemporal optimization is based on the fact that human actions at different points in time are interconnected as a plan of actions that is designed to achieve an end. Because of such linkages, the current and future economic environment as foreseen by agents will be reflected in decision

plans made, and there will be intertemporal substitution of leisure, consumption, or even investment depending on what is anticipated as coming in the future in terms of the market determined cost or reward of various actions that will be open to agents. Thus, the idea makes it necessary to view the current state of the economy from two aspects, one as the cumulated outcome of the past decisions that defines the initial condition of planning, and the other from the plan of actions over the planning horizon. It also makes it necessary to examine whether the fluctuations of the economy can be caused by what is anticipated to happen in the future, for such anticipations can cause a discrete jump in the action plans of agents. Thus, for the first time in economic theorizing, we have come to cope with the phenomena of reverse causation (i.e., what is expected to happen in the future affects our behavior today) and with the fact that economic fluctuations are not necessarily caused by the decisions made in the past alone; anticipations of what is expected to happen in the future are just as important as what was done in the past.

The second component, namely, the idea of endogenous expectations as foresight, follows from the notion of intertemporal optimization, for this optimization requires that the future economic conditions in which planned actions will be carried out be taken into account before such actions are thought out. For economic decisions, it is the entire array of the market prices that characterizes the economic conditions. Since the market prices can only be guessed as equilibrium prices (it is impossible to guess the market prices when the market itself is out of equilibrium), any effort at intertemporal optimization must be accompanied by the foresight on the future market equilibrium prices. But, this foresight must be compatible with the plans made by agents under the same foresight; that is, endogenous expectations must be compatible with the market equilibrium that results from the planned actions of agents under the same expectations. Thus, the idea of rational expectations arose as consistent equilibrium expectations. Many objections have been raised against the idea of rational expectations because the conditions required for such consistency are too stringent in the face of the information falling short of what is required to even guess where the rational expectations equilibrium path might lie. Despite such objections, the theory of rational expectations stands as a viable theory to meet the fundamental requirement for intertemporal optimization.

The third component, i.e., the idea of economic decisions intertwined with the economic environment including a politico-economic policy regime, follows from the first two components. If

agents' economic decisions are based on intertemporal optimization, and if this optimization requires that the future economic environment be forecast, then, an economic policy that changes the policy regime in the future will show up in the planned actions of agents, for a newly created policy regime changes the cost and the benefit of various actions taken therein and because agents proact, rather than react, to such changes. Such intertwining of economic decisions with a policy regime reminds us of the danger of extrapolating the past behavior into the future when a new policy regime is introduced. After the insight first conceived by Muth, it was Lucas who examined the basic question of how to model the decision making modes of intertemporally motivated agents in relation to the environment in which their decisions are made, and how to analyze the interdependence of the two in a consistent way. Today, in foreseeing the effect of economic policies, we consider how such policies will affect the cost and the benefit of alternative actions, hence the decision making modes, rather than assuming that the agents simply react to new economic policies in the same way they have reacted in the past. In demonstrating that the decisions are an integral part of a politico-economic regime environment, Lucas has brought back what Aristotle invited us to think at the close of *Nicomachean Ethics* (Book X), that is, to think about the influences of legislation of laws and constitution, which define the public good and guide individuals in the *polis* in the pursuit of their private goods. By defining what is allowed or not allowed legally, as well as what is costly or not costly to individual agents, in the decision making space, a politico-economic policy regime affects the way individual agents pursue their goals.

It was the intent of this paper to relate all of these tenets of the theory of rational expectations to the phenomenological movement in philosophy, which was initiated by Husserl and Heidegger in the early part of the 20th century. In particular, we wanted to relate the theory to Husserl's phenomenology of the consciousness of internal time and Heidegger's phenomenology of human existence as *Dasein*. These phenomenologies penetrated into the truth of our being, whether in inner time consciousness or in existence, and elucidated it as temporality in the primordial sense. Through our inner time consciousness, we perceive an object as a temporal object by protending what is coming, capturing it, fulfilling it in the present, and inserting it into our memory to retain it, and this memory flows continuously with the constant insertion of new objects. Similarly, in our existence we are set in a perpetual self-motion as ecstasies of temporalized temporality, which essentially

consists in anticipating what is coming, fulfilling it in the present, and retaining it as the history that has been made, to which we undestandably come back for the meaning of our life. If our inner time consciousness and existence have such intentionalities, one directed to what is coming and the other directed to what has been fulfilled, our decision making must be done with the same intentionalities. These intentionalities are also joined by another one, which is directed at the environing world in which we encounter what presences therein including people, past and present. Because our life of actions is forward-looking in nature, and because all of our actions are interconnected over the horizon and concerted toward the principle of living well, our decision making should be modeled as such. In *Metaphysica* (Book IX), Aristotle said that "we do not see in order that we may have sight, but have sight in order that we may see." That is, in the context of human existence, we can say we make decisions not simply because we have the capacity to do so, but more importantly because we desire to make our life complete by making good decisions. In much the same way, in *Nicomachean Ethics*, Aristotle defined our life as a life of teleological actions, which has its destiny in making it a good life by cultivating and directing all of our virtues, of intellect and character, to the first principle of our life, which is to live an active life well. Husserl and Heidegger delved into the vision that Aristotle had, and characterized the activity of our consciousness and existence as the intentionalities that are temporal.

The theory of rational expectations as started by Friedman, elaborated by Muth, and thought through by Lucas, revolutionized our view on the decision making modes of economic agents by returning our thinking to the ethical or normative nature of human beings and by translating this nature into a theory of rational decision making that is intertemporal, optimal, and foresightful of the future market equilibrium conditions. The theory, in this sense, is a return to the age-old ethicality of human beings as well as a venture into a radically different way of looking at the decision making modes of individual agents and the economy, that is, as a process rather than as a structure, just as our consciousness and living are a process rather than a prefixed structure. By returning to the consciousness and existence as they are, Husserl and Heidegger awakened us on the primordial importance of our daily living and warned against the presuppositions or prejudices that keep us from seeing things as they are. In much the same way, the theory of intertemporal optimization and rational expectations has helped bring economics home by awakening us on the primary importance

of how we are making our intertemporal decisions in our daily living with anticipations as to what is coming or to be fulfilled by our actions. Nobody denies that the first principle of our life is to be happy, that is, to be as active as we can be with what we are endowed with as our potentialities. Despite all the difficulties that surround the formation of rational expectations, it would not be too far from the truth to say that the theory of rational expectations, by bringing to the forefront the ethical nature of human existence and decision making rooted therein, has caught up with the way we exist as rational decision makers to live through our life as a project.

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Hiroaki Hayakawa

Born in Japan, educated in the US (high school, university – undergraduate and graduate), BA in mathematics and economics, Ph.D. in economics (University of Michigan). Crossed the Pacific Ocean as an American Field Service student from Japan to the United States, and graduated from Herbert Hoover High School in San Diego, California. The AFS students from around the world had a chance to meet President John F. Kennedy. This marked the beginning of my life and career in the United States. In college, I was interested in philosophy as well as in mathematics and economics, and this interest continues to this day. After getting my Ph.D. from the University of Michigan, I was mainly affiliated with the University of Georgia in Athens, Georgia, where I served as assistant, associate, and full professor. Served also as an interim head of the Economics Department, as director of graduate studies, as a member of the Executive Council of the College of Business Administration, and as a member of the University Senate. I then moved to Japan and taught at a number of universities, private and national. With this background, I have come to UBD (Universiti Brunei Darussalam), one of the fastest rising universities in Asia, and I am having a great time interacting with the bright minds of Brunei Darussalam. I find the country beautiful and peaceful.

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