

MPRA

Munich Personal RePEc Archive

Beyond behavioral economics: who is the economic man

Obregón, Carlos

22 October 2018

Online at <https://mpra.ub.uni-muenchen.de/89653/>
MPRA Paper No. 89653, posted 27 Oct 2018 07:41 UTC



EDICIONES
UNIVERSITARIAS

BEYOND BEHAVIORAL ECONOMICS

Who is the Economic Man?

CARLOS OBREGÓN

BEYOND BEHAVIORAL ECONOMICS
Who is the Economic Man?

Ist Edition 2018, Ediciones Universitarias

Copyright 2018®, Carlos Federico Obregón Díaz

Design and Edition: Ricardo Pascoe (Spot-ON)

The total or partial reproduction of this text is forbidden by any means or procedure, including reprography and informatic treatment, photocopy or recording, without previous permission of the author and/or editor.

This book is available in: www.amazon.com

INDEX

INTRODUCTION	7
WHO IS THE ECONOMIC MAN?	21
HUMANS IN BEHAVIORAL ECONOMICS: THE PSYCHOLOGICAL ROOTS	62
THE NUDGE, BEHAVIORAL MACROECONOMICS AND BEHAVIORAL FINANCE	114
BEYOND BEHAVIORAL ECONOMICS	154
BIBLIOGRAPHY	183

INTRODUCTION

Behavioral Economics introduced the psychological basis of economic behavior. And has been very successful. It has produced five Nobel Prizes. It has influence many governmental policies through the *Nudges*. And has had influence in several economics and business areas such as: Organizational Behavior, Marketing, Behavioral Macroeconomics and Behavioral Finance. However, despite its undeniable success, we will argue that it is too broad to become a new paradigm in economics and it is too narrow to provide an adequate integration of economics with other social sciences. To integrate economics with other social sciences we need to go beyond Behavioral Economics; and in doing so, we will be able to better evaluate the contributions of both traditional economics and Behavioral Economics. This is the purpose of this book.

In 2017, Richard Thaler obtained the Nobel Prize, due to his contributions to Behavioral Economics. Thaler, forcefully argues that we are *humans* and not *econs*. Behavioral Economics describe the psychological behavior of the economic man and argues that he is not rational. Through several game theory experiments Kahneman (Nobel 2002), Tversky¹ and Thaler have proved that economic agents do not behave rational, as assumed by the contemporary Neoclassical School. This was a great contribution, and they deserve the honor of the Nobel Prize. But, many other economists that defended the rationality of the economic man, also won the Nobel prize. Just to name few of them: Samuelson,1970; Arrow 1972; Hayeck,1974; Friedman,1976; Solow,1987; Becker,1992; Lucas,1995; Phelps,2006; Sargent,2011. The Nobel Prize suppose to be given for a concrete discovery that benefits human kind; then How is it possible to get Nobel Prize winners that have an opposite view of the nature of man? And in some cases, they even were winners in the same year; like Kahneman versus Smith, 2002; and Fama versus Shiller, 2013. Is the economic man rational or not?

The story gets even more complicated. Because, even assuming for a moment that the *rational economic man* was a wrong description of the nature of man, and that the *humans* of Behavioral Economics are the right one, we soon

¹ Who did not get the Nobel Prize only because he dies before.

faced another even more difficult dilemma. Sen also obtained a Nobel Prize in 1998. Sen's share with Behavioral Economics the conception that man is not rational, in the neoclassical sense, and that economic man is a social being capable of altruism and social cooperation. But in contradiction to the Behavioral Economics' *humans*, for Sen man is guided by his reason and not by his emotions. For him, man is rational in a much broader sense than with the contemporary Neoclassical School. Because, even though he acknowledges that man's social preferences are not necessarily transitive (Arrow's Theorem); he argues that man through his reason has access to universal values, which provide order to the economic world. It is to be noted that both in Sen and in the contemporary Neoclassical School there is order in the social world, while for Behavioral Economics this is not necessarily the case. The *irrational economic man* of Behavioral Economics guided by his emotions is exactly the opposite to Sen's *rational man*, guided by universal ethical values.

We will argue that science develops through explaining particular phenomena of the real world. Scientific paradigms, while maintaining some degree of consistency and internal communication, often contain theories of reality which are not necessarily compatible. In Physics for example nobody knows how to put together Quantum Physics and General Relativity. While both theories explain significant real events, they do not fully talk to each other. In fact, we may even have diverse theories explaining the same real phenomena in different ways - and both can be correct, meaning that both explain reality in a satisfactory way. For example, even though Newtonian Physics and General Relativity have a common theoretical language, their notion of time is very different. Time for Newton is absolute and more related to the usual ordinary definition, while for General Relativity it is a geometrical dimension of reality. What is time? Nobody knows, but what we do know is that both Newtonian Physics and General relativity explain the physical macro-cosmos rather well.

The discussion should not be about Who is the *real* economic man? Because as scientist we will never know the answer. The best science can do, is to have some workable definitions that shed light in real economic phenomena. The reason why Neoclassical Economists, Behavioral Economists and Sen got the Nobel Prize with different versions of the nature of the economic man, is because their different proposals do illuminate and explain distinct aspects of economic reality.

The question Who is the economic man? Does not really refer to the nature of man, but to the relation between the individual and the society, which happens in diverse dimensions. Kenneth E Boulding identified

three dimensions. The first is the Integrative System, which refers to the set of values that allow a society to remain unified. The second dimension is the Power System. The third dimension is the Economic System. The economic man is an abstraction which refers to the relationship of the individual with the society only in those matters of economic order, that is related to the production and distribution of economic goods.

To Answer the question Who is the economic man? As we will show, is paramount to perform a detailed analysis of the contributions of economics as a science. None of whom we can call great economists in history, *ever thought that there was a true economic man in reality*. The conception of an economic man was always a theoretical abstract construct aiming at understanding the social institutional characteristics that made a society highly productive. They all recognize that human behavior was complex, defined by many factors, emotive and heavily influence by the immediate social group and the society as a whole to which the individual belongs. The description of the economic man never had the purpose, as it is frequently argued today, of reducing human nature to a *rational man*.

The first author that ever described the economic man in a proper way, although it was subject of discussion of previous writers, was Adam Smith in the *Wealth of Nations*. And how could Smith conceive man as rational, if he was a follower of Hume and if Smith's previous book was *The Theory of Moral Sentiments*. Smith was a philosopher and a professor of ethics. For him it was clear that emotions are key in explaining human behavior, that man is heavily influenced by the group and the society to which he belongs and that he has an ethical relation with others which transcends any economic relationship.

But then Why was Smith so anxious to define an economic man in the *Wealth of Nations*? The answer is given in the full title of his great book: *An Inquiry into the Nature and Causes of the Wealth of Nations*. Smith aimed to explain Why England economic development had been significantly higher than Spain's of Portugal's? To do that, he created the first abstraction of what latter on would be known as the economic man. Smith's proposal is very simple. Society must allow individuals to exercise their economic freedom because, of the very simple reason that, each individual seeking his own economic benefit generates economic progress for the whole society. This was historically, the main institutional distinction between England on one side, and Spain and Portugal in the other. But Smith never thought that the economic man – the liberated individual in certain societies in particular economic activities – was actually a good representation of the full blown

nature of man. The full relationship of the individual with the society is described in Smith's previous work *The Theory of Moral Sentiments*. Smith was a moral philosopher; ethics was his field – he had a view of the full blown nature of man that went well beyond the restricted vision of the economic man presented in *The Wealth of Nations*. Smith clearly understood, as did most of the old neoclassical economists, that the individual relationship with the society goes well beyond economic issues.

The question is not whether man is rational or irrational. Man has an evolutionary animal heritage and as such his behavior, as contemporary psychology and neurobiology have shown, is highly influenced by his emotions. Whatever we want to call rational, is clearly sitting in an old evolutionary brain which main roots are not rational. But, that does not mean that man does not have a unique *reason*. What distinguish man for other animals is that it has the notion of an extended time, due to a syntactic language that allows for a more abstract representation of reality. This is what man's unique *reason* is. Reason is nothing else than an extension of irrationality. Animals do have abstract thinking, they have a notion of time and they are capable of planning. Their brain is similar to man's. They capture reality, like man, through images. They have memory and imagination. But the difference is, that Man has a more complex abstract imagination, due to a more sophisticated language - consequence of his own social historical evolution, and therefore an extended notion of time.

Thus, it is true that man's behavior is not just rational. But, in fact rationality is to a large extent an empty term. Reason is part of a more complex unified brain that works together like one system; which also contains the emotions. Therefore, rationality and irrationality can not be really distinguished in man's behavior.

But if this is true, then Why there has been such strong effort by many contemporary neoclassical economists to define economic rationality? Is it because they were ignorant of the enormous importance of man's emotions or because they were looking for something else? Clearly the answer is: that they were looking for something else. They were trying to formalize mathematically, how the economic decisions of individual man relate to the economic welfare of the whole society. And to do this, they had to understand How to explain, forecast and aggregate such individual decisions? The assumption of individual maximizers, introduced by Samuelson², was the

² Samuelson's revealed preferences argue that if the choices that we observe in the market are rational, i.e. they are transitive and that they maintain today's transitivity through time, then they do imply that the economic agent is maximizing a utility function.

logical consequence of the desire to use the enormous descriptive potential of mathematics – particularly differential calculus. The intellectual adventure was only a partial success. The theoretical frame developed is extremely useful as a reference, and it is very helpful in understanding and solving a wide range of economic problems. But it did not achieve the desired results. Optimal social welfare equilibrium requires more than individual maximizers.

Today it is well known that the individual's behavior is influenced by the collective group and by specific social situations. Two classic experiments in psychology are the Robbers Cave experiment by Sherif, Harvey and others³ and the Stanford Prison experiment by Zimbardo⁴. The individual is linked to the group by evolutionary survival traits as the psychology of attachment has shown. There is a fundamental belonging to the group, without which the individual is unable to survive. And this fundamental belonging link is based in evolutionary emotions; therefore, there is nothing that we can call individual rationality that is not group dependent. But, given specific social historical institutions, and under the influence of emotions, there is no doubt that the individual uses his reason and his abstract capacities to foresee and plan in an extended time. Rationality is institutionally and emotionally bounded, but that does not mean that it does not exist or that the individuals are not using it. Reason was evolutionarily developed in man to enhance his survival possibilities. In evolutionary terms, it just does not make sense to provide reason to a man who is not going to use it. Economics can then be seen as the effort to describe the social consequences of individual economic choices, which are based both in reason and in emotions, under a specific Institutional Arrangement – the large markets.

There is no question that in any human decision emotions are central. They not only contribute directly to our decisions, but in addition they guide us in the recollection of information from the environment. Emotions are related both to selfish and to belonging instincts. Thus, to some extent it is not surprising that Behavioral Economics is able to show in many experiments the key role that emotions play in any human decision. But the human brain is an integrated brain, it not only uses emotions - but also reason. Therefore, coupled with emotions, in human decisions we always find the usage of reason.

A key question to elucidate is: In which decisions reason plays a key role? Babies learn to control and guide their emotions; this is the main goal of maternal education. Therefore, the process of socialization is

³ Sherif, M. et al., 1961.

⁴ Zimbardo, P., 1971.

nothing else than learning to control one's selfish emotions to be able to socialize with others. Such socialization further develop the evolutionarily inherited emotions related to belonging. Social institutions are needed to guide the individual's selfishness and belonging instincts into adequate social behavior. The process is possible because belonging instincts guide and redirect selfish ones. Social institutions are therefore needed to produce reasonable individual behavior. The adequate use of reason is the consequence of social living in a proper Institutional Arrangement. Therefore, the individual's capacity to reason properly, social institutions and social life are intertwining.

But the use of reason, even if properly guided by social institutions, do not exclude emotions. The brain is just one and it integrates emotions and reason. In fact, emotional development is required to exercise properly reason in any decision. Whenever any individual acts, whether in an economic sense in the markets or in any other social way, he uses at the same time emotions and reason. The key to individual freedom, is to learn to develop our emotions and to express and enjoy them, while at the same time use them for proper reasonable decisions.

The difference between the economic system and the political system is not that the first one uses reason and the second one does not; they both use emotions and reason. The difference is, as Albert O Hirschman expresses very well, that economics communicates mainly through actions – exit – and the political system mainly through voice. When an individual act in the market he may do it pushed by emotions and/or by careful rational considerations – but the important thing is that it expresses a concrete preference through actions that can be communicated in a very efficient way in a very large social system. The dynamic preferences of the middle class are the basis of a large dynamic market, that fosters technological development and rapid capitalist economic growth⁵.

Markets do not optimize. As Arrow's Theorem has clearly shown, individuals do not necessarily show a linear order in their preferences, and therefore social human preferences are not necessarily transitive; thus, it is not possible to build a social welfare function. And, as a consequence, it can not be shown that markets maximize social welfare. We do need to explore carefully What are the implications of the failure of the contemporary Neoclassical School to show optimality? In the next paragraph we will briefly mention some of the new routes that have been taken. But, before, several points must be raised. 1) These critical new routes

⁵ Obregón, 2008a.

are only possible thanks to the mathematical formalization initiated by Samuelson. Thus, even though a Pareto optimum equilibrium is not the necessary consequence of market behavior, it does provide a parameter against which understand reality. 2) For a wide range of economic problems the frame provided by the contemporary neoclassical theory is very useful. 3) That we are not *econs*, in the contemporary neoclassical sense of the word, does not mean that the abstraction of the economic man is not useful. In fact, we will argue that the economic man is an institutional reality in the contemporary Western culture, that has been shown as the critical characteristic that explains the rapid growth of the capitalist economies. To explain this fast growth was Adam Smith's main goal, when he introduced the abstraction of an economic man. An economic man for him is the one who acts freely according to his own interests in the market. This freedom did explain the fast economic growth of Britain versus Spain or Portugal; Smith was right. And his result does not have anything to do with whether man in his decisions uses more his emotions or his reason. For Smith is clear that he uses both. 4) Behavioral Economics has been successful in showing that it is important to understand how emotions play a key role in certain economic decisions. 5) But Behavioral Economics is just one of the several new routes that have been taken as a consequence of the failure of contemporary Neoclassical Economics to show that markets maximize – i.e. they achieve a Pareto optimum.

The other new routes are: a) Sen's Moral Economy; b) Nash multi-equilibriums based in Game Theory; c) Stiglitz's information multi-equilibriums, d) North and others Neo-Institutional Economics, and e) The uncertainty of Knight and Keynes. In Sen's Moral Economy humans are rational but they are not *econs*, they guide themselves by values to which they gain access through reason. In Nash humans are *econs*, but without full information about what others will do, therefore they play games among them, and there are multi-equilibriums which are not Pareto optimum. Nash results and Game Theory in general, have provided the basis for the laboratory experiments in Behavioral Economics, this shows again the benefits of having a formal frame of reference. In Stiglitz, humans are *econs*, but without full information, and therefore multiple equilibriums can be shown. In Neo-Institutional economics, humans may or not be *econs*; but in ant case, institutions provide the frame inside which individuals maximize, and therefore institutions define to a large extent the optimality of the social equilibrium. For Knight and Keynes the future is unknown – even in a probabilistic sense; and unless there are

social institutions, like the government that provide a frame of certainty to individual decisions, markets can produce very inefficient - suboptimal - equilibriums. In a strict sense, none of these alternatives new routes is fully compatible with any one of the other routes. However, it must be pointed out that all of them use, in one way or another, the frame of reference provided by the contemporary Neoclassical School. This is why, among other reasons, Samuelson's mathematical formalization of the neoclassical model did deserve the Nobel Prize.

There are two reasons to go beyond Behavioral Economics. The first reason is that *humans*, as presented by this school, do not explain many critical economic problems. Behavioral Economics is not an alternative paradigm to traditional economics. It is only one of the New Schools of thought, that has risen due to the failure of the contemporary Neoclassical School to show that markets have a unique maximum welfare full employment equilibrium. Therefore, in order to delimit Behavioral Economics' contributions we need to look at the whole paradigm in economics, which today includes: the contemporary neoclassical paradigm plus all the New Schools of thought. The second reason is that *humans*, as described by Behavioral Economics, are not a good representation of man's evolutionary characteristics. For Behavioral Economics, *humans* are emotional beings which often do not know what is best for them, and need the help of the government to make the choices which are truly convenient; and they display altruistic and social cooperative behavior, even in monetary transactions. But evolutionarily we are neither design to be emotional or rational, nor to be selfish or altruistic and socially cooperative. We are design to be flexible for survival purposes, and to display a wide range of behaviors. Man have two evolutionary instincts, selfishness and belonging. Since we are design to be social, in the *in-group*, belonging guides and redirects selfishness. But, in relationship to the *out-group*, selfishness and aggression dominate. When there are belonging failures in the *in-group*, selfishness and aggression also happen to dominate. Institutions do redefine and modify individuals' behavior. We do not have a uniquely defined human nature. The discussion as to whether we are *econs* or *humans* is to some extent inappropriate; because, whether we behave one way or the other depends upon the Institutional Arrangement.

Behavioral Economics, like the branch of contemporary Neoclassical Economics that defends the free market ideology, has the methodological problem of explaining social dynamics as a consequence of our uniquely fix human nature; and the discussion centers as to which our true human

nature is. But evolution did not design us to have a uniquely defined human nature, we have evolutionarily inherit traits that define our humanity, but which allow us to display a wide ray of behaviors, that range from very selfish and aggressive to very altruistic and social cooperative behavior; and, from very emotional to very rational behavior. We cannot describe human behavior outside of a given historical institutional context. In fact, *econs* main institutional historical characteristic is that they display a selfish behavior in large markets; which is empirically true, even after the findings of Behavioral Economics⁶.

There are really three versions of *econs'* rationality: the soft version used by Smith, the strong rationality assumed by the contemporary Keynesian Neoclassical School and the strong rationality of the contemporary Monetarist-Rational Expectations Neoclassical School. The soft version only indicates the selfish behavior of *econs* in large markets, which is very compatible with our evolutionary characteristics. The strong rationality assumed by the contemporary Keynesian Neoclassical School is not fully compatible with our evolutionary characteristics, but it does recognize that institutions do change individual behavior. Finally, the strong rationality assumed by the contemporary Monetarist-Rational Expectations Neoclassical School defends that institutions do not count (in fact they may only cause damage), and that social dynamics is defined as a consequence of individual decisions. Behavioral Economics is mostly an attack in this last version of strong rationality. Like the contemporary Keynesian Neoclassical School and like the soft version of the economic man, Behavioral Economics argues that institutions do change individual behavior. But, maintains the methodological problem of conceiving individuals as having a fix uniquely defined human nature, a position which is contrary to our inherited flexible evolutionary traits. Both the contemporary Monetarist-Rational Expectations Neoclassical School and Behavioral Economics conceive individuals as having a fix uniquely defined human nature, but of course they disagree as to which that nature is.

We will argue: 1) That for the understanding of a wide range of economic problems the *econs* as defined by contemporary Neoclassical Economics are more useful than the *humans* as defined by Behavioral Economics; which does not deny that for another more restricted but still significant range of problems Behavioral Economics is superior. Moreover, we point out that the range of problems for which Behavioral Economics results useful might increase as research advances. 2) That

⁶ See Roth et al., 1991.

there are other definitions of *econs*, such as the classical one and the early neoclassical, that are different from the one proposed by contemporary Neoclassical Economics. And, that these other definitions result very relevant in explaining key economic problems such as economic development and growth. 3) That there are several strong limitations of using the abstraction of the *econs*, which have been already pointed out by diverse schools of thought in economics. Behavioral Economics is just one of these various schools. However, as we will show, the proposals of these critical schools are not necessarily compatible among them.

Behavioral Economics is a successful integration between psychology and economics, and as such it is very welcome. But it is not the only possible integration. Behavioral Economics uses cognitive-behavioral psychology and social psychology but leaves out several areas of psychology that, as we will show, are of particular interest for the definition of *humans*. Areas such as Freudian Psychology and the Psychology of Attachment. Our evolutionary traits as *humans* are much more complex than the fix uniquely *human* nature proposed by Behavioral Economics. Understanding this complexity is relevant for social and economic problems, and provides further highlights as to a further integration between psychology and economics.

The main contribution of Behavioral Economics is highlighting, that due to man's psychological characteristics, in certain decisions market failures can be produced. There are certain areas where the contribution of Behavioral Economics is undeniable. Like, for example, in programs designed to promote higher personal savings or organ donation. Behavioral Economics is particularly useful for a significant subset of microeconomic problems, but it is much less successful in relation to macroeconomic issues. And in some cases, it has been used erroneously to justify untenable conclusions – example: the usage of behavioral finances to explain the 2008 crisis; see chapter three.

The book is organized in the following way. In the first chapter, we discuss the traditional and contemporary visions of economic man, and how each one of them relates to Behavioral Economics. The main conclusions of this chapter are that: 1) Behavioral Economics is only one of the New Schools of economic thought, which are consequence of the theoretical failure of contemporary Neoclassical Economics to show a unique maximum welfare full employment stable equilibrium. 2) With the exception of Sen's Moral Economy and Behavioral Economics, all the other New Schools argue that both the economic equilibrium and the economic growth path depend upon the Institutional Arrangement. 3) The rational economic man has two versions, the soft one used by Smith and the strong one of the

contemporary Neoclassical School. Both are abstractions of the behavior of man in a particular institutional setting, the large markets; and therefore, neither of them is comparable to the *humans* in Behavioral Economics which are a description of man's human nature. 4) The soft rational economic man is an abstraction that only indicates a particular institutional feature of the contemporary Western societies - the large markets, in which the individual can express his selfishness. And it is compatible with all the empirical findings of Behavioral Economics; which do not deny that individuals behave selfish in large markets. And it is still today, the best explanation of the fast growth of the capitalist economies 5) the strong rational economic man is not compatible with the empirical findings of Behavioral Economics, and was not useful for the theoretical purposes for which it was designed. But despite its limitations, it is the best explanation that we have up to today of the process by which markets allocate resources in a market economy through the price system. 5) Behavioral Economics is an important contribution, but it is not a new paradigm of the economic science.

The second chapter describes the background and the psychological roots of Behavioral Economics. The main conclusion of this chapter are that. 1) Organizations are a micro-cosmos for which the neoclassical theory of the firm was insufficient; Simon's views presented an integrated view of the relationship between the individual and the organization, that was an important contribution. However, while Simon showed that the economic man was insufficient to explain organizational behavior, he did not show that the economic man was not a useful abstraction for the large economic problems for which it was designed. 2) The psychological roots of Behavioral Economics, as presented mainly by Kahneman and Tversky, without doubt describe a human being which is not compatible with the strong rational economic man, particularly in the contemporary Monetarist – Rational Expectations version. And, has an important contribution, because it shows that certain psychological characteristics of the human beings can produce situations in which the economic individual may not take the best economic decision for him, and therefore government intervention is required. However, while it is very relevant in specific circumstances like organ donation or individual saving decisions; the view of *humans* of Behavioral Economics is not the correct view of man's normal market behavior. Behavioral Economics' experiments have two main purposes. The first one is to show that human beings are emotionally dominated and cannot know what is rationally best for them. Many of the experiments design to show that man is not rational are explained

by a lack of information or knowledge, by the short time to take the decision or by the fact that the individual is un-aid to take the decision. In real markets there are organizations and firms that provide analysis and information to the individual. Many economic decisions are repetitive and allow for learning. And most of the unique decisions are so relevant that the individual always seek expert advice and spends time analyzing rationally the decision. The second purpose of the experiments is to show that human beings are not selfish, as assumed by economists; that they are altruistic and socially cooperative. The experiments designed for this purpose are highly conclusive. However, they are setting dependent. In large markets it is shown that individuals are selfish. And in the international arena they are also selfish. To explain why individuals may be sometimes selfish/and or aggressive and sometimes altruistic and/or social cooperative, we need to have a broader vision of the relationship between the individual and the society, which is partially discussed in this chapter, but is not fully presented until chapter four. 3) the individual does not have too many choices as Schwartz has argued. 4) we are not as predictably irrational as Ariely argues, although further discussion in this topic is presented in chapter four.

The third chapter presents the Nudge, Behavioral Macroeconomics and Behavioral Finance. The main conclusions of this chapter are: 1) It is impossible to argue against success; Nudges have shown that they are useful for many microeconomic problems. However, many of the so called Nudges, are not related to the psychological characteristics shown by Behavioral Economics; they are just related to market failures, that had been already discussed by many other schools of economic thought. 2) One problem in the Nudge literature which deserves further discussion is: Who should take the decision of the Nudge? If the government is to establish the Nudge, it should require political approval. And if the Nudge is to be transparent, it requires to educate and inform the individual, in which case the Nudge, in many instances, would not be any longer necessary. 3) Behavioral Macroeconomics argues that it follows Keynes thought, but it is not true. In Keynes individuals are rational, and despite their rationality major economic crisis can occur, due to the uncertainty as to the unknown. In Behavioral Macroeconomics individuals are irrational, dominated whimsical by animal spirits, which are five: Confidence (which is very different from Keynes' uncertainty), Fairness, Corruption, Money Illusion and Stories. It is shown that none of these five animal spirits explains the 2008 crisis; and that the explanation of

Behavioral Economic of the 2008 crisis is incorrect. The 2008 crisis is due to fundamental institutional mistakes which are the reason that the confidence went down. 4) The consumption function as described by Behavioral Economics is useful for some specific microeconomic problems; but it is not a substitute of the main theories of the consumption function, which continue being the main explanation for broad macroeconomic problems such as: macroeconomic stability, the postwar consumption data and bequest data. 5) the efficient market hypothesis, EMH, inscribes itself in a broader view of risk as probabilistic, which has been useful for many purposes. The vision of probabilistic risk has convinced pension funds to invest in index funds, has created the derivatives market and is the basis of the Modigliani -Miller Theorem in Corporate Finance. Its contributions therefore are undeniable. But it has limitations, mainly it is not useful when a market or an economy is not near equilibrium. Risk is dual: it is probabilistic near the equilibrium; and it is uncertainty, in the Knight -Keynes sense, far from equilibrium. Behavioral Finance has shown that many statistics in the stock market do not behave as expected with the EMH. But in all the cases they mix ex-ante and ex-post data, which is of course a violation of uncertainty, in the Knight- Keynes sense. Given uncertainty, we know that ex-ante probabilistic risk, any way it is measured, will not explain ex-post results, and that ex-ante prices should be more volatile than ex-post dividends. Thus, given uncertainty the results of Behavioral Finance are not surprising. Furthermore, they do not necessarily invalidate the main proposal of the EMH: which is that markets cannot be beaten. Because if the statistical incongruities found are due to uncertainty, since uncertainty cannot be known, it continues to be true that markets cannot be beaten. There is a contradiction in Behavioral Finance, because if we can find ex-ante information that does predict future performance, this implies that the markets could be beaten, something that given the statistical evidence, nor even Thaler is prepared to argue. But, then it follows that if markets cannot be beaten, such ex-ante information cannot be found. And there are powerful theoretical reasons to argue that this such should be the case. Asset prices do reflect uncertainty and that creates volatility, which can be increased due to herding phenomena; and therefore, there are not stable intrinsic prices as the EMH implies; but despite this fact, today's prices are always the best possible guess of future prices, and no rule can be found to beat the market. Asset prices volatility is significantly higher than the expected with the EMH; but it is due uncertainty, and not to irrationality.

Finally, the last chapter presents an analysis of the evolutionary traits that define human behavior; which is used to understand why we need to go beyond Behavioral Economics. The main conclusion is that we do not have a defined human nature, but only evolutionary traits which define two basic instincts: selfishness and belonging. Since, we are by evolution designed to live in a social group, normally the belonging instinct guides and redirects the selfish instinct. However, belonging failures will allow the selfish instinct to dominate. The belonging instinct only relate to the *in-group*, therefore relations between groups are dominated by selfish aggression. This allow us to understand why social expenditures as GDP percentage are very high in developed countries, while international aid is so low. Moreover, it explains the Robbers Cave and the Zimbardo Stanford Prison experiments; and, also why individuals can be selfish in large markets and altruistic and cooperative in other social or laboratory settings (as Behavioral Economics finds). The belonging instinct gives rise to a Social Conceptual System with its corresponding Institutional Arrangement which provide order to social life. This social order establishes the ways for the individual to satisfy the three belonging routes: Love, Social Significance and Existential Significance. Social Significance - or social belonging, express itself through three social systems: the Integrative, the Power and the Economic and Exchange System. It is only in Western societies that the Economic and Exchange System becomes so predominant. And it was the genius of Smith to understand that this feature explains capitalistic economic growth. Because, for the first time in history there is a free social-institutional expression of the individual evolutionary selfish instinct, and that unleashes individual creativity; and in particular it is the consumption of the large middle class, the one that explains the enlargement of the market and technological development. The large evolutionary frame presented in this chapter, allows to see the contributions of Behavioral Economics and other schools of economic thought with a broad perspective, which may be a guide for a better integration between economics and other social sciences.

The book is written so that can be read in several ways. The reader well verse in contemporary and historical economic thought may want to skip chapter one. The reader which is very familiar with the contributions of Behavioral Economics does not need to read the summaries presented in chapter two and three and may go directly to the comments made in these chapters, which are clearly mark under this title. Chapter four is recommended to all readers.

WHO IS THE ECONOMIC MAN

Economics starts with Adam Smith's discovery that countries which institutionally allow for *econs* to express their selfish preferences in large markets grew much faster. The only rationality assumed by Smith was a soft one – that is *econs* can express their preferences in the market. And *econs were not assume to behave always selfishly*; they were just institutionally allowed by the society to act selfishly in large markets. Smith discovery, that due to large markets economics grew much faster was based in the technological development that mass production allows.

When Ricardo and Marx wrote, Capitalism was already growing fast; and capitalist economic growth was taken for granted. Thus, they focus in other relevant economic question. How is economic value form in the markets? Or put it in another way: What does economic value in the markets depends on? This question became the most relevant one in the history of economic thought. Ricardo and Marx answers was the Labor Value Theory, which as we will discuss ended up in a tautological proposition, with relevance from the point of view of social justice but, that could not explain markets price formation and the allocation of resources. The old neoclassical economists task was to explain such phenomena. Their first observation was that economic value comes from scarcity in relationship to human needs or desires, thus the value of an economic good is related to its cost of production and to the utility it generates. The law of supply and demand. This was a solid contribution. There was then, a full blown discussion as to: What utility is? And there were several unsuccessful attempts trying to prove that markets maximize social economic welfare⁷.

With this background, contemporary neoclassical economists introduced the strong version of the rational man which has been the main focus of criticism of Behavioral Economics. Introducing strong assumptions as to the rationality of the individual agent, contemporary Neoclassical Economics launch three main research programs: 1) Welfare Economics to prove that markets maximize social economic welfare; 2) General equi-

⁷ Only economic, nor the whole social welfare. The utility function only had economic motives (something that changed with Gary Becker and others).

librium Theory to show that a unique market stable equilibrium exists, and 3) Rational Expectations Theory to demonstrate that economies are always close to full employment. In 3), there was disagreement between the two branches of the contemporary Neoclassical School. It was defended by the Monetarist-Rational Expectations School; and was opposed and criticized by the Keynesian School.

The first two research programs had been invaluable, they had helped us to understand how the price system works in real markets, and how the allocation of resources happens. But despite their important contributions, the point we wish to emphasize is: *that they failed to achieve its original purpose*. Arrow's impossibility theorem showed that markets do not maximize social economic welfare. Game Theory and Information Theory showed that multi-equilibriums exist and that many of them are not Pareto optimal.

As for the third research program, it was very useful to explain the stagflation phenomenon; but, the 2008 financial crisis fully discredited in real life the Rational Expectations proposition that economies always remain close to full employment.

The relevance of these failures for our discussion in here is, that the strong rationality assumed by these three research projects did not produce the expected results – it could not explain real market phenomena. Thus, there is no longer *the absolute requirement* to assume such strong individual rationality. To some extent, Behavioral Economics efficient criticisms of the strong rational economic man, is no longer as relevant as it may seem, because economics by itself has recognized that such assumption did not produce the expected results, and that it is not the key to understand the dynamics of real economies.

For many of the New Schools the assumption of the strong rational economic man is no longer what explains economic social dynamics. Neo-Institutional economics basis his analyses in the Institutional Arrangement, and not in the characteristics of the individual economic agent; therefore, whether the economic agent displays strong rationality or not is not any longer that relevant. Information Economics basis his analysis in the socially available information; again a systemic feature that does not point out as crucial the rational characteristics of the economic agent. Because, whether the economic agents are strongly rational or not, the economy given distinct social information sets will produce multi-equilibriums anyhow. Game Theory shows that even strong rational economic agents will produce Nash multi-equilibriums which are not Pareto optimal. Keynes' economics introduces uncertainty as to the

unknown future and shows that given this kind of uncertainty, again, whether the economic agents are strongly rational or not, the economies will end up far away from full employment equilibrium. Therefore, for all these schools the main characteristics of the exchanges in the market have to do with, exogenous to the individual, institutional characteristics.

There are only two schools of the new economic thinking that base their analysis in the characteristics of the economic agent: Behavioral Economics and Sen's economics. They both oppose the strong selfish rational economic agent. For both of these schools, men display not only selfish behavior but also cooperative and altruistic social behavior. But the explanation of such behavior is diametrically opposite. For Behavioral Economics man is dominated by his *emotions* and by social influences and may not always be sure of what his true real preferences or interests are. For Sen's economics man is fully rational in a broader philosophical dimension than economics, he can distinguish through his *reason* good and evil and shows concern for others – he is not purely selfish, and he is capable to dominate his passions or emotions and to transcend misguided social influences. Now we are faced with a dilemma, because even if we are willing to drop out the strong rational economic man, we are still left with two very distinct and opposite views of man, the one of Behavioral Economics and the one of Sen's economics – and both had produced Nobel Prize winners.

To understand this previous dilemma, it is needed to further discuss What is science? And How it develops? As we had argued in the introduction, and as we will argue again in chapter four; different abstractions of the nature of man can be useful to solve distinct economic problems. Notice that such abstractions may appear as fully opposed, because they emphasized distinct characteristics of man and never fully describe our *evolutionary traits as humans*. The fact, that reduced versions of man, which abstract only some of his characteristics, are useful for social science; however, does not mean that discussing our evolutionary traits is not relevant. It is because, it provides a benchmark of reference for the different versions of the nature of economic man. In chapter four, we will discuss our evolutionary traits and we will show that even the version of *humans* of Behavioral Economics, despite its empirical support, is only a reduced version of our *evolutionary characteristics as humans*.

Even the strong version of the rational economic man results useful for analytical purposes. Not only it has provided the theoretical framework for discussing other alternatives; but it also signals one of the key

features of modern societies. Information is more and more easy to process and to analyze, and such analysis is more easily transferable, which means that individual agents have more and more access to a rational social processing of information, which has become a free public good. And that indicates, that one has to be very careful with assumptions or empirical studies - such as Behavioral Economics - that point to an individual that takes important decisions based in the wrong analysis. However, in science the answer fortunately lies in the capacity of a given abstraction to explain real phenomena. This is how the proposals of Behavioral Economics must be judged. As we will see, many crucial economic issues and problems can be explained by using a soft version of the rational economic man. However, some relevant economic phenomena are better explained by Behavioral Economics or by Sen's Economics; and even by the strong version of the rational economic man.

SELFISHNESS AND RATIONALITY

The economic man has been described as been rational and selfish. Behavioral economists had shown that man is not rational – his behavior is strongly influenced by his emotions and by the values, judgments and attitudes of the social group to which he belongs; and it has also provided evidence that man displays altruistic and cooperative behavior, which negates the notion that man is a selfish creature. With this evidence, Thaler has emphatically argued that we are *humans* and not *econs*.

As we will see in the next chapter the results of Behavioral Economics do have solid empirical basis, they follow a long tradition of experiments in cognitive-behavioral psychology and in social psychology, and cannot really be questioned. We are in fact to some extent *humans*; but, that does not mean that *econs* are not any longer useful to understand key economic issues. To understand Why? Is useful to further discuss selfishness and rationality.

Selfishness

The problem with Thaler's comparison between *humans* and *econs* is that *they are not comparable* – they belong to different dimensions of analysis. *Humans* is a description of the full blown behavior of real man, *econs* refer to a very specific behavior of man under a particular Institutional Ar-

rangement – large markets. *Humans* refer to the nature of man, *econs* to a policy description as to which institutions should be established in a society. *Econs* are selfish, but they only exist in economic relations in large markets. *Econs* in fact should behave selfish because this is good for the society as a whole. *Econs* are the consequence of a very peculiar historical Institutional Arrangement, that allows and promotes selfish economic individual behavior in large markets.

The *abstraction* of the economic man is not a description of the *nature of man*, it is not an attempt to study the evolutionary characteristics of the *Homo-Sapiens*. In this sense the comparison between *humans* and *econs* made by Thaler seem to us not to be very meaningful. *Econs* do not exist, they refer to a specific human behavior in a particular institutional setting – large markets.

The relation between the individual and the society happens in several systems. Following Boulding, I have previously described three systems⁸. The Integrative System, the Power System and the Economic and Exchange System. The Integrative System defines the identity of the society or group and includes traditions and customs, ethical principles, norms and social obligations, social categories, values and beliefs, religion, benevolence, the social law, social and individual commitments and so on. The Integrative System is the fundamental one in any group or society. The Power System is defined by the public use of social force. Individual power is restrained and regulated to allow for social harmony and integration. Social force is only used as support of the Integrative System. Power relations, however, often define the interaction among groups or societies. The Economic and Exchange System relates to the production and distribution of economic goods and includes exchange selfish relations. In many Primitive societies the Economic and Exchange System does not allow for the individual's exercise of his self interest and therefore the production and distribution of economic goods is rigidly defined by the Integrative System. But as the societies diversify, the Economic and Exchange System acquires a life of its own. It is not however until recently, that contemporary societies allow the individual to exercise his selfish interest through market exchanges. It is this specific institutional feature of modern capitalist societies that called the attention of Adam Smith.

Smith had previously written *The Theory of Moral Sentiments*, in which he describes both the ethics of moral sentiments and the ethics of duty; thus, he was well aware that we are *humans*. However, what is relevant to focus on is, that Smith, for the first time in philosophical thought,

⁸ Obregón, 2014b; 2016.

discusses in his book the ethical implications of selfish individual actions that do not damage society. He argues that the individual must be free to act, provided that he (both in his judgment and in the judgment of the society) does not harm others. Later on, analyzing the history of England, particularly versus Spain and Portugal, Smith found that the key institutional difference is that England allowed for individual freedom in the markets. And England was growing much faster than Spain or Portugal. Therefore, in *The Wealth of Nations* Smith finds what he was looking for since *The Theory of Moral Sentiments* – the conditions on which individual selfishness not only did not harm others but instead produced benefits for everybody. The first abstraction of the economic man is the one provided by Smith. In this version of the economic man, the individuals in pursuit of his selfish interest promote economic growth and development.

Now, the fact that the individual is institutionally allowed and even encouraged to pursue his selfish interest in economic exchanges in large markets, does not mean that the individual does not display cooperative, aggressive or altruistic behavior in other systems of relationship between the individual and the society – as Smith was well aware. Moreover, the integrative and Power Systems do have an economic expression of its own that can be reflected in monetary relationships; but, that does not negate the importance of institutionalizing large markets where the individual could express his selfishness.

Rationality

There is a lot of confusion in the literature as to what rationality really means. In a soft version man is rational as long as he can distinguish his preferences and expresses them in the market; this soft version is the one used by Smith. Notice that this soft version does not preclude emotions or social influences. It really is not that important where preferences come from, as long as they are recognizable and can be expressed through the market. In this soft version of rationality, markets play the very important function of transmitting individual preferences through actions – what Hirschman called *Exit*⁹.

In stronger versions of economic rationality several of these other elements are added: 1) an ordinal utility function. 2) a well defined set of alternative strategies. 3) a behavior of maximizing expected utility. 4) that preferences are transitive. 5) that they maintain today's transitivity through time. 6) a known probability function of future scenarios. 7)

⁹ Hirschman, A.O., 1970.

that future markets can be treated by adding dated commodities as distinct goods. 8) that the risk facing the individual is probabilistic risk 9) that uncertainty can be managed through insurance based in probabilistic risk. 10) that individual economic agents use all available information and process it accordingly to rational expectations – that is using the best economic model available. Many of these additional stronger conditions were introduced to develop the three research projects in neoclassical contemporary economics already mentioned above: Welfare Economics, General equilibrium Theory and Rational Expectations Theory.

The rational economic man of Smith does not satisfy the strong conditions imposed later on by contemporary neoclassical thinkers. The selfish economic man of Smith is the consequence of a specific Institutional Arrangement - under which the individual is free to pursue his selfish interest through the Economic and Exchange System - which defines the conditions for the economic markets to operate.

The rational economic man is not, and it did not ever pretend to be a description of the full blown relation between the individual and the society or of the nature of man. Smith was clearly aware that *humans* were not *econs*; he just emphasized in *The Wealth of Nations* what was his new discovery- that social institutions that allow for *econs* to exist in large markets where *they can express their selfish preferences* are the key that explains the rapid economic development in Capitalism. The strong rational economic man of contemporary neoclassical thinkers was neither a description of the full nature of man, it was an abstraction of how individuals behave in large markets, which unsuccessfully pretend to demonstrate that markets have a unique stable equilibrium, maximize social welfare and maintain economies near full employment.

PRICES AND ALLOCATION OF RESOURCES, A HISTORICAL BACKGROUND

By the time in which Ricardo and Marx wrote, Capitalism was already growing rapidly; and therefore economic growth was not any longer their concern. Therefore, they concentrated in the problem of economic value and the allocation of resources through the price system. Economic value for both of these authors came from labor. For Ricardo, was mostly a technical problem, which solution allowed for better economic policies. For Marx, it was mainly a problem of social justice. Ricardo was

unsuccessful in finding a *numeraire*, and therefore could never fully established his labor theory of value. The *numeraire* was finally found by Sraffa, almost two centuries latter, and only for a non-monetary stationary economy without technological change. Marx labor theory of value was trap into a tautology that had no solution. He clearly understood that incorporated labor could not produce economic value, unless this value was verified by the market – what Marx called socially necessary labor. But if economic value can only be defined ex-post, once the market transactions do happen; then, it could never be verified ex-ante that labor is in fact the source of economic value. Marx's labor theory remains a proposal about social justice; but as a technical explanation, of market prices and the allocation of resources through the markets, it was not unsuccessful. *Ricardo's and Marx's failures send the economic profession into new routes to explain Where does economic value come from?*

For the old neoclassical economists, scarcity and individual preferences, as expressed in the market, define through supply and demand the market prices. This was both an elegant and successful solution. And it must be emphasized, that it does not require anything more than the soft rationality of the economic man introduced by Smith, it was enough that the individual could identify and express his preferences through the market.

It is not until contemporary neoclassical economists established the mathematical conditions required for the maximization of economic welfare that the notion of rationality fully changes from the soft version to the strong one.

To prove that markets, maximize economic welfare was an old research project in Neoclassical Economics, which culminates in the mathematical conditions imposed by the Contemporary Neoclassical School. However, it must be emphasized that, all along the development of the mentioned research project, neoclassical economists, even the contemporary ones, understood that the political and social systems were not included in the problem of maximizing social economic welfare. Lionel Robbins, of course, oppose the usage of interpersonal comparisons, because the question to answer was If the economic system by itself could maximize social economic welfare? But Robbins never denied that interpersonal comparisons should be made in the political system. Walras, the founding father of the general equilibrium paradigm, wrote another book related to the society's social problems¹⁰. Samuelson, was a Keynesian who advocated an active role of Government. The utility function to maximize only included, always, *economic motives in the utility function. Maximizing social welfare was always*

¹⁰ Walras, L., 1896.

*understood as maximizing economic social welfare, and not the full blown welfare of the society. Non-economic motives were first introduced in the utility function by Gary Becker and others; and were not widely accepted by the profession. Becker's individuals maximizing jointly economic and noneconomic motives fully contradicts the vision of the world of Adam Smith, for whom ethical issues and economic issues belong to two different systems of relation between the individual and the society*¹¹.

As we have insisted on, there are three routes by which contemporary neoclassical economists pretended a positive answer to the old questions: Do markets maximize social economic welfare? Do they have a unique optimal equilibrium? Do they provide stable full employment? These were: Welfare Economics, General Equilibrium Theory and Rational Expectations Theory. None of them was successful. But they built a solid mathematical theoretical frame which actually provided not only the basis to show why they were wrong, but also to understand many key problems in economics. The last five decades of Nobel Prizes in economics were almost exclusively given to those that built the solid contemporary neoclassical paradigm or to new thinkers that proposed new routes to be taken once the failure was shown. Among these new routes – New Schools of thought - we find: Neo-Institutional Economics, Information Economics, Sen's Moral Economics, Game Theory and Behavioral Economics.

In the first section of this chapter we will discuss briefly the failures of Welfare Economics, General Equilibrium Theory and Rational Expectations and the lessons learnt. In the second section we present the main characteristics of the New Schools of thought in economics. This provides a good framework for our discussion of Behavioral Economics in the next chapter.

¹¹ It has always been tempting for economists to introduce in the utility function non-economic motives. Boulding did, for example, to explain altruism. This is however, the wrong route, and one that has never been accepted by the main tradition. There are strong reasons not to do it. Man, as Boulding himself has argued, has other relationships beyond the economic exchanges. That was also the vision of Smith. Optimizing welfare, for the main tradition, which in this always followed Smith, only refers to economic motives. In Obregon 1984a, in the appendix, it is shown that mathematically the conditions for an economic agent to have altruistic behavior just because it maximizes his own utility function – just because he feels good to help – are very restrictive. In a world of n goods, for an economic agent A to behave altruistic in a good 1 in relationship to another agent B, it is required that agent B has less than the minimum that agent A thinks that agent B should have in all the other $n-1$ goods. Otherwise, it can be shown that, agent A by being altruistic in good 1 loses trading possibilities to position agent B in any of the $n-1$ goods with the minimum that agent A thinks that agent B should have. This extremely restrictive condition, indicates that altruistic behavior obeys to ethical principles and belonging relationships just as Kant, Smith and most of the great philosophers thought, and not to utilitarian considerations.

THE CONTEMPORARY NEOCLASSICAL FAILURE: LESSONS LEARNT

Since 1969 there had been 80 economic Nobel laureates of which 56 have work in – or close to - the contemporary neoclassical paradigm, and 24 in New Schools of thought: 9 in Game Theory, 5 in Neo-Institutional Economics, 5 in Behavioral Economics, 4 in Information Economics and 1 in Sen's Moral Economics. The main theoretical frame that maintains the contemporary neoclassical paradigm is due to Welfare Economics and General Equilibrium Theory, and to a much lesser extent to the Theory of Rational Expectations.

Welfare Economics

The story of Welfare Economics is one of a series of frustrated attempts to show that markets do maximize social economic welfare. In the first attempt, Marshall and Pigou proposed that an egalitarian society maximizes social economic welfare. It failed due to the recognitions that we can not measure utility in a cardinal way, and therefore we can not compare the marginal utility derived from the income of different individuals, and we cannot affirm that an egalitarian distribution of income maximizes welfare¹². In the second attempt, Kaldor argues that economists should make recommendations only based on efficiency, because if inequalities are created, the winners can always compensate the losers. It failed because Samuelson showed that the only way we can be sure that a bundle of goods B is better than a bundle of goods A is in the case where, for

¹² **First attempt:** Jevons pointed out that the labor-value theory could not be applied to things that lack value; for him, utility arises in things because of its relation to human needs. In the works of Jevons, Menger and Walras, marginal utility becomes the essential element of consumer behavior and they find a rule to transform subjective value into measurable quantities. Wicksteed transformed the utilitarianism of Jevons into a scale of preferences and analyzed the utilization of resources to the maximum for a certain purpose. Menger, on the other hand, developed his theory in terms of needs and not in terms of pleasure, such as Jevons. For Pigou, economics was a science because it dealt with measurable amounts of satisfaction. Marshall and Pigou accepted the law of incremental marginal utility and assumed that different people obtain the same satisfaction from the same income; under this assumption, an egalitarian society would maximize social welfare.

The first attempt fails: Marshall's and Pigou's conclusion was shown as invalid in view of the fact that satisfactions can not be added and, therefore, we have to use an ordinal ranking and not a cardinal number. Since we can not measure utility in a cardinal way, we can not compare the marginal utility derived from the income of different individuals and, therefore, we can not affirm that an egalitarian distribution of income maximizes welfare.

all possible welfare distributions, B is preferred to A. And, like he demonstrates, the above condition is satisfied only in the extreme case, and without economic interest, in which B has more of each good than A (assuming there is no disutility). This conclusion shows conclusively that there is no real efficiency rule. Any efficient solution depends upon the given distribution of resources¹³. In the third attempt, Bergson and Samuelson introduced a Social Welfare Function that does not depend upon the distribution of resources, it is only the social aggregate of individual preferences. But, Arrow shows that if one or more individuals has a non linear order in his preferences, the social preferences could be not transitive and therefore the Social Welfare Function could not be built¹⁴.

¹³ **Second attempt:** Pareto and Barone presuppose independence between the different satisfactions of people and the absence of external economies and diseconomies; with this frame of reference, it is possible to separate efficiency from equity – i.e. justice considerations, which is known as the Pareto principle. Kaldor, considered that the economist should be in favor of any change that improves the efficiency of the system, because if inequalities are created, the winners can always compensate the losers. Hicks, like Kaldor, argues that economists should make recommendations only based on efficiency, since the gains and losses are random at the individual level.

Second attempt fails: Three criticisms were made to Kaldor: 1) it is not always possible to measure efficiency (Scitovsky); 2) the consumer surplus used by Kaldor, based on partial equilibrium, can give wrong efficiency results (Samuelson), and 3) compensatory payments are not always politically feasible. Little criticized Hicks and pointed out that some economic changes can cause large changes in the distribution of income; he observed that we can not expect these to be compensated in the future.

It is particularly relevant to understand Scitovsky's criticism of Kaldor, through what was known as the Scitovsky paradox. This says, that having shown that a position B is more efficient than a position A -according to the criterion of Kaldor and Hicks-, using the same criterion it can be shown that after the community has adopted position B, very well A can become a preferred position for B. The reason for the paradox is that there is a reciprocal relationship between the social valuation of the bundle of goods and their distribution.

Samuelson showed that, even in those cases in which the Scitovsky paradox does not occur, we do not have a criterion to define the optimal solution. Since once it is understood that the preference judgments about the bundles of goods A and B are different in the case of the two distinct distributions, which correspond to positions A and B: it follows immediately, that that there is a need to understand what happens when there are other distributions: because A and B are not the only feasible ones. Due to the above, Samuelson concludes that the only way we can be sure that B is better than A is in the case where, for all possible welfare distributions, B is preferred to A. And, like Samuelson demonstrates, the above condition is satisfied only in the extreme case, and without economic interest, in which B has more of each good than A (assuming there is no disutility). This conclusion shows conclusively that there is no real efficiency rule.

¹⁴ **Third attempt:** Faced with the impossibility of making economic policy recommendations based solely on efficiency, Bergson introduced the notion of a complete Social Welfare Function, which adds the social preferences of individuals and can take into account external factors, so that the economist can forget about the problems associated with distribution. Samuelson gave an elegant exposition of the mechanism by which social welfare is maxi-

General Equilibrium

General equilibrium Theory had important repercussions for welfare economics¹⁵. But, It is not possible to demonstrate a unique optimum equilibrium

mized in the tangency between the Social Welfare Function and the production function that optimizes the use of resources.

Third attempt fails: However, Arrow showed that it is not always possible to add the social preferences of individuals, so that we can not always build a curve of social welfare without falling into contradiction. The argument of Arrow can be easily understood, if we imagine a community composed of three people: a, b and c, which have to choose between three possible policies: 1, 2 and 3. Let us suppose that the order of preference of each person is the following: a-1p2, 2p3, 1p3; b-2p3, 3p1, 2p1; c-3p1, 1p2, 3p2 (p denotes "prefer"). If we assign each person an equal weight and try to build a social welfare function, based on the preferences of the majority; we find two votes for each of the following preferences: 1p2, 2p3 and 3p1. As can be seen, this system is incongruent and has no solution. The results of Arrow are generated basically because the individual c does not show a linear order in his preferences, but this is perfectly valid in reality: for example, an individual may prefer a communist country to a socialist country and at the same time prefer a capitalist country to a socialist country.

Conclusion: The controversy over welfare economics clearly showed that, as Harrod said, we can not talk significantly about efficiency and optimal allocation of resources unless we have a market. And the choice of the market as a method of valuation is in itself a value judgment, since prices imply a given distribution of resources.

Arrow's impossibility theorem put an end to the very long term quest of Neoclassical Economics to show that markets optimize social economic welfare; it was proven technically that they do not. In order to evaluate social economic welfare, we need judgments, external to the market, which is what Sen proposes latter on.

¹⁵ The general equilibrium model has been very useful to reinforce some of the approaches to welfare economics and to understand them more precisely. In particular, the two fundamental theorems of welfare economics are derived from the general equilibrium model. The first of these theorems states that the process of assigning a market equilibrium is Pareto efficient (It is said that an allocation of resources is Pareto efficient if there is no possible redistribution that can improve the situation of one person without deteriorating the situation of another). This result, which is very general and does not require any assumption of convexity, is also very important because it emulates mathematically and allows to explain the invisible hand of Adam Smith. This result is the axis of the justification of the importance of the price system as an efficient system of transmission of consumer preferences, a mechanism that, as we have argued, is central to understanding the rise of Western Capitalism. But, remember our discussion about welfare economics: this result implies a given distribution of resources (and in general a given Institutional Arrangement), which is implicit in the prices that manifest themselves in the market. So the success of the market as a transmitter of information in the West can not be exported to other cultures without basic considerations about the institutions in those cultures; for example, the presence or not of a middle class, the legal system, the possibility of coalitions, and so on. The real world is characterized by Nash and information multi-equilibriums and to design an adequate Institutional Arrangement is a key problem to take into consideration. And in a multi-equilibrium world, the pareto optimality of the first theorem does not hold. Despite the above, this first theorem is not only an impressive result, but one of great importance for the economic science in general.

The second fundamental theorem of welfare economics states that, if an efficient Pareto allocation

rium without the use of a set of *strong* assumptions¹⁶. The relaxation of these assumptions leads to imperfect competition models, information models, and game theory models in which it is possible to find systems with multiple equilibriums of which many are non-optimal, and even explosive situations without solution. Multiple equilibrium models show that the equilibrium obtained depends to a large extent on the institutions that are assumed.

General Equilibrium Theory explained carefully the market behavior that transmits information from the individual to the society. But, was unsuccessful to prove the existence and stability of a unique Pareto efficient equilibrium. Therefore, the need (or benefits) to assume a strong rational individual was not established. But soft rationality, selfishness and the importance of the markets for transmitting information is maintained.

tion is found, then it will always correspond to a competitive equilibrium characterized by a defined set of prices and a redistribution of resources. This result implies, that any redistribution of goods that one wishes to carry out, can always be done efficiently through the market, through a redistribution of resources. Mathematically, this result requires the assumption of technology and convex preferences. Note that the redistribution of resources can not only be politically impracticable, but can physically involve the redistribution of human capital, which cannot be done. Despite these impediments, there is an important message in this second theorem, because it implies that if the distribution of income is achieved by, for example, a tax (or benefit) from a single exhibition, then the desired redistribution of welfare can be achieved without sacrificing the efficiency of the market. The theorem has relevant implications. On the one hand, it is a natural defender of the importance of using the market and taking efficiency into account, since it tells us that the market can always be used; on the other hand, it makes it perfectly clear that the market can not solve equity problems and that these must be addressed directly via the redistribution of income. This message is important in terms of resisting both the temptation to distort efficiency in order to achieve equity, and the temptation to argue that equity must be sacrificed for the sake of efficiency. In practice, however, the redistributions that would be required do not seem to be politically attractive in many cases, so that considerations are always made between equity and efficiency, and it is not uncommon for non-Pareto solutions to be established.

¹⁶ Walras, also made scarcity the essence of value and forged a process by virtue of which by means of "tantonement" the market moves towards equilibrium. Walras studied the general equilibrium by counting equations and unknowns, and using the Walrasian auctioneer; however, this method does not tell us anything about the existence, uniqueness or stability of the equilibrium.

In the general equilibrium of Leontief, one can prove the existence and uniqueness of the equilibrium, but not the stability of the primal and dual problem at the same time. In a neo-classical general equilibrium with trials (that is, where there are no inventories or transactions are not executed unless they are correct; so that implicitly there is a Walrasian auctioneer); stability can be proved given certain assumptions, such as the theorem of weak revealed preferences (which implies that the aggregate demand excess function behaves as a function of excess demand of a particular individual) or the substitution assumption among all the goods (this implies that the price increase in a good, keeping all other prices constant, increases the excess demand on all other goods). Stability in neoclassical models without trials, and where there are inventories, requires the introduction of new assumptions about the nature of the exchange system (see, for example, Intrilligator, 1971, chapter 9, and Varian, 1984, chapter 6).

Rational Expectations

The theoretical vision of the School of Rational Expectations is that of an economy which is basically in equilibrium; it is the triumph of the classical economy in reproduction. However, there is nothing in the rational expectations method that allows analyzing expectations in relation to another potential equilibrium, because the price system of that other equilibrium simply does not exist, and there is no information about it. In this sense, Rational Expectations have nothing to say in a situation of multi-equilibriums. In the case studied by Keynes of an economy substantially far from its equilibrium of full employment (the Great Depression or the 2008 crisis), future expectations linked to the uncertainty of what is unknown become central. In this case, the price system linked to the current equilibrium does not reflect the possible economic transactions that characterize the equilibrium of full employment¹⁷.

The Keynes-Knight uncertainty does not contradict rational expectations: it simply complements them. The economic agent can process all the information available to them efficiently and, even more, can have access to all the available information in the economy, and despite this, the fact remains that, in situations such as the Great Depression or the 2008 crisis, the uncertainty associated with the future is such, that it requires different solutions to the normal macroeconomic adjustment policies around equilibrium.

Rational Expectations Theory assumed a very strong rationality of the economic agent to prove that the economy remains always near full employment equilibrium, but was unsuccessful. Even with strong rational economic agents the economy may enter a major economic crisis due to uncertainty as to the future; see next chapter comments on Behavioral Macroeconomics.

¹⁷ Economic activity will always be influenced by expectations. In general, these expectations can be formed from what is known or may be linked to uncertainty (Knight-Keynes) regarding what is unknown. The expectations that are formed from what is known can be created based on different methods of using the set of information that is possessed; among the methods studied by economists are extrapolative, adaptive and rational expectations. The last is the superior method of the three. Expectations linked to uncertainty regarding what is unknown may or may not be relevant. If the economy is growing close to the equilibrium of full employment, the future expectations linked to the uncertainty of what is unknown are not the relevant ones. The rational expectations method, is extremely relevant in the design of macroeconomic policy, but it is not enough to analyze the Great Depression, or the 2008 financial crisis. For these problems, characterized by economies far away from the equilibrium, the uncertainty and ignorance to which Keynes referred becomes relevant.

Lessons Learnt

The general equilibrium model's method of analysis has been shown to be fundamental to understand the importance of relative prices in the adequate distribution of resources in the economy. The great and indisputable neoclassical contribution is the understanding of the function of the price mechanism, as an efficient transmitter of information that allows the genesis of social action based on individual choices. The price mechanism relates changes in individual utility to changes in the cost of production. The great difference that occurred in the 20th century between Western Capitalism and Soviet socialism was due to the rapid technological revolution that occurred in the West. Such technological revolution was consequence of an expanding market, guided by the fast dynamics preferences of the mass consumption of the middle class. In this, the neoclassical economists were right; Mises criticized socialism for lacking a rational pricing system. The spirit that we find in neoclassical thought is that of a search for the relationship between individual choice and collective needs. The desire to explain the equilibrium methodologically from individual choices is not only a search for individual freedom, but also for the rules of action of the community that best allocate resources according to individual needs. Through the market, information is provided to the community about individual preferences; this information is essential to make optimal decisions about allocation and distribution of resources.

The general equilibrium model however, ended up in the recognition of the existence of multi-equilibriums which are not necessarily Pareto optimal. Therefore, proper information channels and adequate institutions are needed for the markets to operate reasonable well. The extension of the general equilibrium model to intertemporal markets by simply treating a merchandise on different dates as a different merchandise, implies perfect future foresight – there is no real time, the future is traded today. And it is only an adequate extension when the future looks very much like the present – again when the economy is maintained for a long period of time near equilibrium. The model can also be extended to the treatment of uncertainty by simply assuming complete insurance markets or prices associated with possible future contingencies, in such a case then it is said that there is a complete set of future markets (Arrow-Debreu). Again insurance markets – derivatives like the Credit Default Swaps in the 2008 crisis – only work if the economy remains near equilibrium. Uncertainty in the Knight- Keynes sense cannot be treated with general equilibrium models.

Markets do work, but only when there is proper information and adequate institutions that maintain future uncertainty under control, and allowed the economy to remain near full employment equilibrium.

One of the key assumptions of general equilibrium models is that each economic agent is small in relation to the whole, which implies that if a coalition is formed that seeks to control the market, an anti-coalition will be formed that will destroy it. The result is based on the fact that each member of the initial coalition can benefit personally by establishing agreements outside the coalition. This implies that forming coalitions and getting rid of them has a zero cost, but in the real world this does not happen. The cartels and coalitions put exit and entry costs and seek rules that guarantee their permanence. This is the reason for the need for an antitrust law, as exists, for example, in the United States. Thus, the model only works under the assumption that coalition formation is not costly, but this depends on the Institutional Arrangement. In capitalist Russia and in some Latin American countries, privatizations and free relative prices meant the rapid formation of coalitions and monopolies that legally, or using mafia illegal actions, control large proportions of certain markets and make the formation of coalitions by other market participants very expensive. The neoclassical economists of the second generation made their recommendations in privatizations in these countries, without understanding: *that the institutional conditions historically given made the key assumption in coalitions of the general equilibrium model irrelevant.* Had they relaxed the assumption, they would have been able to study conditions of imperfect competition and models of Game Theory with Nash equilibriums, which would have made them understand the practical and inadequate consequences of their recommendations. The failure of privatizations, both in Latin America and Russia, due to the extreme concentrations of property that they produced, clearly showed the limitations of the general equilibrium model. Markets only work if there is a proper Institutional Arrangement.

Prices reflect a whole set of institutions -including the distribution of resources- under which the economic relationship in the market is gestated, so that prices reflect the entire Conceptual System and the Institutional Arrangement of the society in which the economic relationship in the market occurs. Within this Institutional Arrangement there are relations between individuals who do not pass through the market: power, benevolence, envy, traditions and customs, legal, political and others. A solution of pure efficiency would require adding in a single way the indi-

vidual preferences in relation to a Social Welfare Function, but this is not possible for the general case because, as we have seen, inconsistencies in the aggregation can be generated. But what does this mean? Well simply that we can not obtain an efficiency solution that does not depend on the distribution of resources, and that this in turn depends on many other value judgments and in general on the whole Conceptual System and the Institutional Economic and Social Arrangement.

The decisions of equity and institutional changes, can not then depend exclusively on the market and on considerations of efficiency, since, as we have seen, efficiency in turn depends on the distribution of resources and, in general, on the Conceptual System and the Institutional Arrangement. However, given the distribution of resources, the price system does provide information on individual economic preferences, which is impossible to obtain via other mechanisms; and this information is useful for making social decisions. Note, however, that the fewer the individuals that can participate in a market, the more the information will be biased; thus, while we do not know that an egalitarian distribution of resources is the best; we do know that an excessively concentrated distribution of resources means that the market does not reflect the interests and preferences of the majority - in particular, overly unprotected groups cannot communicate their preferences via the market.

Note also, that even the preferences of an individual with high resources, are not necessarily expressed in the market-for example, he may wish that the poorest groups receive a higher income and may be willing to pay an additional tax for it, conditional upon the fact that everyone with high resources also pays the tax. The market does not provide a way to transmit this preference. And a single unilateral transfer of this individual to others without other individuals with high resources making also transfers, can be seen by this individual as of no consequence for the poorest groups to reach the social status that he prefers. The individual with high resources, for example, may want more resources for the needy classes, because it may represent greater public safety and other benefits. But this will only happen if the tax is not paid also by other individuals with high resources. If only he makes the transfer, no benefit is achieved - then he will not do it.

The information obtained through the market is useful, but we must understand from what distribution of resources comes and from which Institutional Arrangement arises. There is no escape other than to make value judgments in social analysis. The question however, is: Who should make the value judgments? To the extent possible, they should be shared

in society, and to the extent that this is not possible, they should be taken by the political representatives of the people. At this point we will return. in our analysis of Sen's Moral Economy in the following section.

Markets cannot foresee the future, the best they can do is to forecast it based upon today's information. If there is proper information and the Institutional Arrangement works properly and is trustable, the economy, in the absence of external shocks, may remain near equilibrium – and Rational Expectations may be a good proxy of the economic agents' behavior. But institutional failures to cope with internal or external shocks will reduce confidence, and the uncertainty as to the unknown may dominate economic agent expectations, and then a major crisis can occur. In economies already far away from equilibrium, Rational Expectations do not work, the only way out is institutional intervention to rebuild confidence.

The previous reflections, however, should not be understood as the assertion that the information that the market provides is not relevant. It is so, for several reasons: 1) given the distribution of resources, it allows to quantify the cost or benefit of many social actions; 2) even more importantly, it allows the expression of individual selfishness and gives the individual a sphere of freedom; 3) this sphere of freedom has been fundamental to capitalist development - mass consumption has been the key to technological development (Smith); but note, that this requires the expansion of the middle classes; 4) add information instantaneously on a set of problems that would be impossible to obtain by other means; 5) offers information on which many equity problems can be reconsidered; 6) transmits information about individual preferences to the production process in a dynamic way, which stimulates technological development in the productive process and this in turn stimulates new preferences that guide again technological development in the production process, and so on. The most important points are (2) and (6). The difference between the communist failure of the 20th century and the success of the capitalist countries can perhaps be explained exclusively by these two points. Thus, the existence of markets is vital and the social system must seek to expand them and use them for decision-making, but this unequivocally implies the creation of a broad middle class. It is important to understand that purely efficient solutions do not exist; but, it is also necessary to realize that efficiency directs, restricts and provides information about the equity decisions that are under consideration.

Recognizing that there is an Institutional Arrangement, and that change and adequate development of the institutions is necessary, since

they are a precondition for the market to exist and to work properly; does not eliminate the problem of the interaction of the individual with the institutions. Whatever the given Institutional Arrangement is, the individual human being maintains his own personal creativity and also an intimate relationship with his emotions and preferences. Whatever the social order, the questions of How to socially capture the individual's creativity? and How to increase the individual's spheres of freedom? are fundamental. And, they are particularly relevant for the West. The market is not the only solution, but it has proven to be one of the important mechanisms in the individual-society relationship, and in the enrichment of the sphere of individual freedom. However, the success of the market in Capitalism occurred in a specific institutional context, characterized among other things by a broad middle class, an efficient democratic state, a developed legal system, free press and respect for both physical and intellectual property. In different institutional contexts, the social decisions taken based on criteria of market efficiency do not necessarily yield as good results as it has happened in the West. The failure to take into account the previous reflections, partly explains the great failure of the recommendations of economic policy made by the neoclassical economists to the communist economies in transition. Particularly in underdeveloped countries, a fine balance between equity and efficiency is indispensable, taking into account the historical Institutional Arrangement. If only equity predominates, we produce a Cuba with enormous inefficiencies; but if we only implement efficiency, we generate the social and economic crisis experienced by the communist economies in transition or the low economic growth suffered by México.

The three great lessons learnt are: 1) markets do not eliminate the need for social value judgments, to work well, they need proper information and an adequate Institutional Arrangement; 2) the price system and the existence of markets is still, however, the most efficient, known, way to transmit information from the individual to the society; 3) markets have been key in the development of capitalist societies.

Behavioral Economics has shown that individuals do cooperate and have altruistic behavior; but, that empirical result is irrelevant to the selfishness of the economic man expressed in large markets – an institutional feature of Capitalism which has been key for its economic development. Behavioral Economics' *humans* just do not compare with the *econs*, they are in different dimensions. *Humans* are related to man's behavior, *econs* to the institutional characteristics of large markets. *Econs* do not have to be

strongly rational, nor do they have to be *humans*, they just have to behave selfishly in the large markets.

The introduction of the strong rational economic man was mainly due to the attempts to show that markets maximize economic social welfare; that they have a unique, stable, optimal equilibrium; and that they maintain the economy near full employment. Since such attempts failed, there is really no need (no benefits) to assume the strong rational economic man. We do not need such strong rationality for *econs* to operate in the markets, it is enough soft rationality. Soft rational selfish *econs* operating in the markets are the key for capitalist development, and are the consequence of a specific institutional feature of Western societies, which is key to preserve. We do not want to go back to a *human's* society with no economic growth, like it happened through many centuries of Western history.

THE NEW SCHOOLS OF THOUGHT IN ECONOMICS

The New Schools of thought addressed the failures of contemporary Neo-classical Economics. The need to understand What is the role of institutions? generates the new Neo-Institutionalism. The failure of Rational Expectations, particularly given the 2008 crisis, caused a revival of Keynes' thought. The consequence of Arrow's impossibility theorem, which sealed the failure of Welfare Economics, was Sen's Moral Economy - which as a solution introduced value judgments, an external factor. The failure of General Equilibrium Theory ended up in multi-equilibriums analyzed both by Information Economics and by Game Theory. The failure of Neoclassical Economics to explain Organizational Behavior generates the beginnings of Behavioral Economics, which will be explained in the following chapter. In what follows, we will briefly review the contributions of the other New Schools and how they relate to Behavioral Economics.

Neo-institutionalism

Both Neo-Institutionalism and Behavioral Economics argued that the contemporary neoclassical vision of how the economy works is wrong, and they both agree that institutions are needed. However, their vision of the economic dynamics of the social system is diametrically opposed. Neo-Institutionalism focus its analysis on the institutions; while Behav-

ioral Economics focus it on the limitations of the individual. For Neo-Institutionalism the analysis of social dynamics and economic equilibrium starts with the Institutional Arrangement, the individual economic agent is always a given datum. The individual is always creative, and he is the source of economic progress; but whether there is progress or not depends upon whether or not the Institutional Arrangement is the proper one. A proper Institutional Arrangement is such that allows for individual creativity to be express. For Behavioral Economist the individual economic agent cannot identify always what is his real interest and institutions are need to help him. This is a critical difference, for Neo-Institutionalism proper institutions are required but not to guide the individual, just to let him express his creativity. For Behavioral Economist the individual has to be guided and institutions are responsible to guide him so that he arrives at a proper solution. For Neo- Institutionalism the individual is a given datum and there is nothing wrong with him, economic problems such as underdevelopment arise due to improper institutions. For Behavioral Economics individuals have to be guided and institutions must decide what is best for him – because even though the individual is given a choice, it is predictable what choice he will take depending upon how the institution frames the question or the circumstance.

Neo-Institutionalism has been influential to such a degree, that it could be said that nowadays the thesis according to which the market is delimited by an Institutional Arrangement is generally accepted; this is reflected in the fact that several neo-institutional economists have received the Nobel prize: Coase (1991), Fogel and North (1993) and Olstrom and Williamson (2009). In spite of this, it is still not clear what is meant by Institutional Arrangement and there is discussion about this¹⁸.

In general, Neo-Institutionalism has been predominantly influenced by the analysis and study of the institutions of Western economies. The vision of institutions is the consequence of the microeconomic analysis of transaction costs, the analysis of property rights and the development of contract theory. Coase's proposal¹⁹ that Neoclassical Economics without friction does not correspond to the real economy -which is characterized by transaction costs (costs of searching and obtaining information, costs of negotiating and deciding, and costs of monitoring and make contracts effective) - led to important changes in the study of the industrial organization in the contributions of Alchian, Williamson and others.

¹⁸ Obregón, 2008b.

¹⁹ Coase, 1937.

In this friction economy, the system of property rights defines the incentives of economic agents. North, for example, makes a historical analysis of the consequences of different systems of property rights. In this type of economy, asymmetric information problems as well as incentives are central, and contract theory becomes basic for the analysis. The agents theory studies the information problems between the contractors (Fama, Alchian, Demsetz, Stiglitz and Holmstrom), while the relational and incomplete contracts theory studies the information problems between the contractors and an interested third party, a judge for example (Macaulay, McNeil, Williamson and Alchian).

The historical roots of the thought of Neo-Institutionalism are in the North American institutional thought of Commons. This author defined the institution as the collective action in control of individual action²⁰. Commons placed a special emphasis on the study of the transaction as a transfer of ownership. It is particularly notable that there is no influence of Veblen's thinking in the New-Institutionalism, and this is particularly due to the vision of this New School, which considers history and institutions only from the point of view of the Institutional Arrangement that characterizes the West; so that a broader and more general historical point of view, like Veblen's, was left aside. More in this point, below.

In fact, the idea that markets work under uncertainty and lack of information, and that, therefore, economic decisions depend on an Institutional Arrangement, has a long tradition in economic thought. Even though this idea never managed to dominate the mainstream of economic thought, it was always defended by various economists throughout the history of economic thought. In this tradition I have pointed out²¹, among other authors, Smith, Malthus, Marshall, Keynes, Knight, Marx, Schumpeter, Veblen and Boulding.

Neo-Institutionalism is a great contribution to economic thinking, uncertainty and lack of information make institutions essential. The Neo-Institutionalism has allowed a new vision of the harmony of Adam Smith. Coase, Alchian, Williamson, North and others have had a great influence on contemporary economists. The most recent growth models explain the non-neoclassical convergence based on institutions. The Information Economy finds in the institutions the explanation of the possibilities of multi-equilibriums. The Sen's Moral Economy sees in the establishment of institutions -for example, democracy or individual freedom- the path of economic progress.

²⁰ Commons, 1934, p.69.

²¹ Obregón, 1984a.

Despite its great successes, Neo-Institutionalism is far from being an integrated discipline with a precise unique vision. There are important contradictions, for example, Williamson versus North. At one extreme, Neo-Institutionalism has adherents who consider it an extension of the neoclassical model²², which should be expanded and include more restrictions. At the other extreme, some other exponents of Neo-Institutionalism consider the new paradigm as antithetical to the neoclassical model and incompatible with it²³. There is not a well-integrated view, of general acceptance, that we can call the Neo-Institutionalism model of the economy, which could constitute a true alternative to the well developed neoclassical model. However, Neo-Institutionalism clearly delimits and enriches the neoclassical perspective, even giving rise sometimes to opposite conclusions: as for example in anti-oligopoly regulation and the auction of public monopolies.

Neo-Institutionalism shares with most of the other New Schools the concept that underdevelopment is the result of the absence of the institutions that the West has. For this school, the Western individual's creativity is the motor that generates historical change; and progress is generated by establishing institutions that adequately motivate respect for private property, democracy, order and for the law in general. The problem with this vision is that it prevents the study and understanding of the historical evolution of other societies, which do not take the individual as a central figure in their social dynamics.²⁴

From the point of view of economic policy, Neo-Institutionalism allows to understand problems such as the firm, oligopolies and others, for which it has been very useful. However, as regards to the international policy of patent protection, the case of its importance for global development has been exaggerated by some exponents of this school. Rodrik, has pointed out that such a protection is not always justified from the point of view of the interests of the underdeveloped countries²⁵.

North's contribution on the resilience of informal institutions, allows explaining why in certain cases the export of Western institutions to underdeveloped countries does not work properly (this is the historical example of India, or México); and this in itself was a great contribution. But

²² Dahlman, 1979.

²³ Furubotn and Richter, 2003.

²⁴ This topic is developed with breadth in Obregón, 2008c.

²⁵ (Rodrik, 1999, p.148)

what North does not explain are the strengths of these informal traditional institutions that, mixed with heterodox new formal institutions, have produced economic success stories in countries like China, and other Asian countries, that never fully adopted the Western institutions²⁶.

Neo-Institutionalism showed that economic development is a function of the Institutional Arrangement; but it failed to prove that Western institutions are indispensable for such development, nor that the establishment of Western institutions in underdeveloped countries promote economic development.

The comparison between Neo-Institutionalism and Behavioral Economics shows the limitations of the second to deal properly with such problems as economic development or the role of institutions in the establishment of the economic equilibrium. Starting the analysis from the individual agent and not from the institutions makes Behavioral Economics quite distinct from Neo-Institutionalism.

²⁶ Rodrik represents an advance on North as he recognizes the importance of the strength of domestic institutions to stimulate development, but there is still in Rodrik the insistence of seeing the institutions of other countries as a transition to the optimal institutions, which are the Western ones; and to explain the success stories based on these institutions, i.e., respect for private property and democracy. (Rodrik's proposals are presented more extensively in Obregón, 2008a.) The reality is that Asia developed mostly without democracy and that in China respect for individual rights is very limited, and of course there is no democracy. These societies are competitors of the West, not their followers; they have adopted from the West the minimum necessary to integrate globally and compete, but basically they continue to be societies with values and institutions that are very different from the West. Openly analyzing these differences is relevant, and changes our focus on the problem of underdevelopment; Obregón, 2008b and 2008c are widely dedicated to this analysis. The New Schools of economics, like the previous ones, have not dealt with the consequences of not seeing development as a natural process. In particular, the vision that development is a process that occurs naturally once the appropriate institutions (and policies) are implemented, has diverted the attention of economists, both of the new and old schools, from the study of two central problems: 1) the analysis of how development could be generated from the current conditions of the underdeveloped countries and from the own specific historical institutions of each country, and 2) the possibilities and development consequences of reordering the international Institutional Arrangement that exists between developed and underdeveloped countries have not been sufficiently studied. The thinking of the New Schools, even though it means a great advance over the old ones, continues to be influenced by the predominating epistemology in economic thought, that of the economy of reproduction. This epistemology conceives economic development only as a natural consequence of individual economic freedom – which suppose to produce progress and accumulation of capital; and has restricted the analysis of underdevelopment to answering which are the absent Western institutions in the underdeveloped countries that impede individual economic freedom. This epistemological position has precluded the analysis of other routes to development, like the one followed by China and other Asian countries.

A historical note on institutionalism

Even though it is not the central topic in this book, it is convenient to establish the main difference between Neo-Institutionalism and traditional Institutionalism, particularly in the works of Veblen and Boulding.

In Veblen, as in the Neo-Institutionalism of North, an institution includes both the Conceptual System of values and the actual institutions that implement such Conceptual System. But there are two key differences, one that in our opinion favors North and another that favors Veblen. In Veblen, like previously in Marx, social change happens only through technological change; North introduces the social change that happens because of social intentional design, a key feature of contemporary societies. But what favors Veblen is that, while the individual is a given datum in North, it changes historically in Veblen. Thus, in Veblen we can understand the historical genesis of the free economic man. It becomes very clear thanks to Veblen, that the free expression of the individual's selfishness in large markets is a particular institutional characteristic of contemporary Western societies. The individual is not historically always the agent of change in Veblen; while it is clearly so in North. In Chapter four we will present our own vision in these issues.

Boulding, as we have discussed above, pointed out that the economic relation through the market is just but one of the three key relations of the individual with the society, beyond the economic system there is an Integrative System and a Power System. This contribution of Boulding is central, because it points out that man's behavior changes accordingly to the system in which he interacts with society. He may behave selfish in large economic markets and altruistic and cooperative through the Integrative System. Moreover, if we put together Veblen's and Boulding's contributions we can see that there is a historical dynamic of the three social systems. And therefore the interaction of the individual with the society in each one of the three systems is distinct in diverse societies and in different points in time in the same society. All this means that there is not a unique nature of man as *human*. There are basic evolutionary traits of man and those will be described in chapter four, but how they are expressed depends upon the specific historical Institutional Arrangement. Our nature as *humans* cannot just be found through empirical laboratory findings in a particular society and at a given point in time – mainly because such findings imply already a given Institutional Arrangement. Human behavior cannot be disentangled from the institutions that are

influencing it. An individual economic agent just does not exist by itself. The laboratory findings are very useful, but they have to be related to what we know from other social disciplines in an evolutionary and historical institutional context, as we will do in chapter four.

Take for example the finding that in the Dictator Game people displays altruistic behavior. Voluntarily 74% of participant dictators divide money equally (see next chapter); which is argued by Behavioral Economics as an empirical demonstration that *humans* are not rational selfish calculators maximizing their personal well being. What it really shows is that in developed countries there is a strong Integrative System. And we must recall that both the Integrative System and the Power System are reflected in monetary and economic transactions. Therefore, it is not surprising to find that the Integrative System plays a role even in monetary transactions in the laboratory, in the Dictator Game and others.

The Integrative System and the Power System are part of the economy. Governments at the beginning of the 20th century were in average in developed economies only around 10% of GDP, today they are around 40%; of which the Power System represents around 4%, social expenditures around 25% and other integrative functions 11%. Thus, the Integrative System represents 36% of the economy, the Power System 4% and the Economic and Exchange System 60%²⁷. Individuals living in developed economies live in a world in which social cooperation is a reality, that is why they display cooperative and altruistic behavior. That however does not mean that they will behave altruistic in a large competitive market, *in these markets they behave selfishly*.

Information Economics

Information Economics success is also shown in the fact that it has produced four Nobel laureates: Mirrless and Vickrey, 1996; and Spence and Stiglitz, 2001²⁸. Information Economics represents a strong critic to the

²⁷ These calculations are not precise because available data does not allow to do it. But they are good enough proxies. For calculations on government size and social expenditures see Obregón 2018b, which uses OECD data. Military expenditures can be found in CIA world factbook – www.indexmundi.com, which are updated up to January 1, 2018. Military expenditures are around 2.5% of GDP. The Power System includes military expenditures plus other enforcing agencies of which no hard data can be found, but we estimate that they do not add more than 1.5% of GDP.

²⁸ Akerlof also won in 2001 the Nobel prize due to his contributions in Information Economics; but, given also his relevant contributions in Behavioral Macroeconomics, we have included him in the group of Nobel laureates in Behavioral Economics.

vision of the economy of the free market neoclassical theorists, according to which neither the institutions nor history matter. For the free market neoclassical economists, given the distribution of income, which is assumed not to be a problem to be solved by economic theory, equilibrium is basically determined by fundamental forces: such as preferences and technology. On the other hand, Information theorists argue that information problems, coordination and other institutional characteristics may impose limits on economic possibilities which are as real as technology or preferences.

Information economy focuses on understanding the causes of *coordination failures* due to which the neoclassical equilibrium is not obtained. This literature shows the possibilities of multiple equilibriums in which one or several of them can be sub-optimal; and, nevertheless, the markets, and in general even the existing institutions, may be insufficient to move the economy from the sub-optimal equilibrium to an optimal neoclassical equilibrium²⁹. In addition, the sub-optimal equilibrium can create path dependence³⁰. And temporary shocks can have long-term consequences, there is hysteresis³¹.

The models used in the study of the information economy are dynamic, either with continuous or discrete decision variables. In some cases, the economic actors are identical; in others, they differ in their benefit functions (payoff); and in others, they differ in their strategy sets.

The inefficiencies of information give rise to a large set of economic externalities, that can not be resolved through private arrangements, such as: 1) information; 2) group reputation effects; 3) effects of agglomeration; 4) spillovers of knowledge, and 5) pecuniary. The sequence is that there are multiple Pareto equilibriums that can be ranked according to their degree of efficiency; one of these equilibriums is superior to all the others in the sense that it is better for all, but the other inferior equilibriums exist, with their corresponding vector of prices, that do not move the system out of the inferior equilibrium.

Information Economics has been applied to diverse economic problems, among them, financial crisis³², and underdevelopment³³.

²⁹ Arnott and Stiglitz, 1991, Kranton, 1996, North, 1994.

³⁰ Engerman and Sokoloff, 1997, Hoff, 1994, Mookherjee and Debraj, 1999.

³¹ Tirole, 1996.

³² Greenwald and Stiglitz, 2003.

³³ Hoff, 2000; Hoff and Stiglitz, 2002.

There is a very close relationship between the absence of information, the Institutional Arrangement and the uncertainty regarding the future. Knight and Keynes had explored the consequences of uncertainty for obtaining economic equilibrium and for the determination of employment levels, but none of these authors managed to properly formalize their thinking. Theorists of underdevelopment have argued for a long time that it was due to development traps such as low industrialization, low research and inappropriate institutions; but they did not formalize their thinking either. The great contribution of the Information Economy is that it formalizes: 1) that the economic equilibrium depends on the Institutional Arrangement; and 2) that the growth path of a given economy also depends on the Institutional Arrangement. A critical message is that today market prices and institutions may not deliver neither the desired economic equilibrium nor the required long term growth path.

Information Economics argue that whatever institutional interventions have to be done must be analyzed in a dynamic path.

Just like Neo-Institutionalism, Information Economics analyses the fundamental economic problems of unemployment and underdevelopment from the point of view of the institutions and not from the point of view of the characteristics of the individual economic agent as Behavioral Economics does. Information Economics proved that even with strong rationality assumptions, markets do not necessarily produce either full employment or the desired growth path.

Game Theory

Game theory has shown that there are not only multi-equilibriums but that many of them are not Pareto optimal – they are Nash equilibriums. Nine Nobel Prize winners have had very relevant contributions in Game Theory: Harsanyi, Nash and Selten (1994), Aumann and Schelling (2005), Hurwicz, Maskin and Myerson (2007) and Tirole (2014). The main message is that once the game is set, it defines the conditions under which economic agents operate – basically not knowing what the other economic agents will do. And since there are not coordinating agencies, many of the economic decision are optimal - condition upon what economic agent A thinks other economic agents will do. But such decisions, will not necessarily take the game solution to a Pareto optimum, and in fact may produce very suboptimal equilibriums.

Notice that even informing the participants that it is possible to achieve a Pareto optimal solution will not help, because the fact of the matter is

that they cannot communicate with the other participant or participants and establish a pact of no aggression and of cooperation to the common goal of the Pareto optimal equilibrium. Given the game, agent A does not know what Agent B (or other agents) will do; and a movement of A towards the Pareto equilibrium, may end up putting him in a worse position than he started in if B decides not to cooperate – this can easily be shown in the Prisoners Dilemma Game.

There is a close relationship between the game, the Institutional Arrangement, the lack of information, and the uncertainty as to the future. Both the wrong game and the absence of information can be seen as the equivalent of having the inadequate Institutional Arrangement. And the uncertainty as to the future may also be seen, as the lack of confidence in the Institutional Arrangement to manage properly future events.

Tirole (1996), is a good example of what occurs in the real world, he shows that both a corrupt economy and a non-corrupt economy have stable equilibriums. In a non-corrupt economy, the optimal individual strategy is to be no-corrupt; but, in a corrupt economy it is to be corrupt. That is why both equilibriums are stable. Notice that the equilibrium has little to do with the individuals' preferences. Even if we assume that all the individuals in the corrupt economy would rather live in a non-corrupt economy, the corrupt economy will persist as long as there are not institutional features (including market prices – because markets are in itself an institution) that allow the individuals to act together in a non-corrupt manner. This example can be extrapolated to full employment or to the right development path; almost all, if not all, of the individuals rather have full employment and proper economic development, yet their individual optimal behavior may not take them there. Institutional interventions are required.

Game theory, like Neo-Institutionalism and Information economics, focuses in the institutions – that define the game – and not in the individual characteristics of the economic agents, as Behavioral Economics does. Even strong rational agents, in the wrong game, will produce suboptimal equilibriums.

A revival of Keynes' thought

Already the success of Information Economics, as we have been saying, had produced a renewed interest in Keynes' macroeconomics. This can be seen in Greenwald and Stiglitz (2003), which is more or less a formal presentation of Minsky's model of a credit economy, which in turn was

based in Keynes liquidity preference theory. But the 2008 crisis made the revival much stronger. Because reality had shown in a dramatic way, that Lucas was wrong in saying that Keynes was dead, and that the Rational Expectations claim that the markets will always maintain developed economies near full employment equilibrium was seriously mistaken.

In Keynes thought economic agents are rational, but they cannot foresee a future that does not exist; therefore, if institutions make mistakes that show them as incapable, confidence as to the institutional capacity to deal with future unknown events may deteriorate rapidly. There are two channels through which such lack of confidence impacts the economy. The first one is the liquidity preference theory, which basically says that banks confronted with a deterioration in the balance sheet of the economic agents will raise the banking lending rate and that this rate will become inelastic (it will not respond) to changes in the Central Bank rate. Therefore, traditional monetary policy will not be successful. Bernanke's policy of buying directly private sector debt, was an explicit recognition that there was in fact a liquidity preference phenomenon in the 2008 crisis, and that traditional monetary policy influencing the Central Bank rate was not going to be successful. The second channel is the marginal efficiency of capital, which says that the lack of confidence will force investors to increase the discount rate of future investment' returns. Notice, that not only investors are affected by the lack of confidence, but also consumers of durable consumer goods who should also increase their rate of discount. This second phenomena, explains why consumer confidence took so long to recover in the USA³⁴.

The revival of Keynes' thought is explicitly recognized in Mervyn King's latest book, *The End of Alchemy* (2016), in which he calls Keynes'uncertainty - radical uncertainty'; and argues that it has an enormous relevance to understand the real economy and the financial markets. Mervyn King was the Governor of the Bank of England 2003-2013. Akerlofs and Shiller's book on *Animal Spirits* (2009), also pretends to be a revival of Keynes thought; although, as we will argue later on in chapter three, they misinterpret Keynes.

In Keynes, as in Neo-Institutionalism, Information Theory and Game theory, markets are unable to reach the optimal equilibrium due to institutional failures and not to the lack of rationality of the economic agents as it happens in Behavioral Economics.

³⁴ Keynes never discusses this second phenomenon, but it could be argued that it is implicit in his consumption function, in which consumption is a function only of today' income. See the section on Behavioral Macroeconomics.

Sen's Economics

Sen's Economics and Behavioral Economics are the only two of the New Schools of economics that, following the tradition of the contemporary Monetarist-Rational Expectations Neoclassical School, center their analysis in the economic agent rationality –or irrationality, and not in the institutional characteristics of the economy. Both schools have in common that they are critical of the selfish rational economic man; both the *humans* of Behavioral Economics and Sen's moral economic agent are socially cooperative and altruistic. However, Sen's economic agent is diametrically opposed to the one in Behavioral Economics. For Behavioral Economics, Kahneman's system 1 (see next chapter) is very influential: thus, *humans* display conducts fully defined by emotions. Moreover, humans in general behave ethically, but they are not fully trustable, because certain ethical conducts would change if the monetary reward is significant. In contrast, Sen's rational economic agent is fully rational, even beyond the strong rationality assumed by contemporary Neoclassical Economics. He is capable to distinguish good and evil, is able to control his emotions and his passions, and can be trusted to do what is right beyond his selfish interest.

As we saw before, Arrow's impossibility theorem meant that a Social Welfare Function cannot be built; and therefore, contemporary neoclassical economists were unable to demonstrate that markets maximize social economic welfare. Sen solves this problem going back to what precisely economist from Leonel Robbins onwards were wanting to avoid: interpersonal comparisons. They became feasible in Sen, because economic agents are not longer selfish but ethical individuals, who understand rationally their social responsibility. In Sen, the preferential order of a set of social alternatives is not narrowly defined in the space of individual selfish utility, but in other spaces on which individuals can manifest their responsible and ethical preferences.

The theory of underdevelopment of Sen is based on his theory of freedom³⁵ and rationality³⁶. For Sen, the value of freedom has a strong universalist assumption³⁷. Freedom for him is not only the ultimate goal and the way to measure development, but also what drives and causes it. For this author development must be measured through the capacities that the individual has to satisfy: what he considers necessary (according

³⁵ Development as freedom, 2000.

³⁶ Rationality and freedom, 2002.

³⁷ Sen, 2000, p.244.

to his reason). Sen argues that all individuals, according to their reason, always consider five basic freedoms of value: 1) political liberties (freedom of expression and choice); 2) economic facilities (opportunity to participate in trade and production); 3) social opportunities (education and health); 4) guarantees of transparency, and 5) protection and security. For Sen, one form of freedom reinforces the other and so development is generated, which is measured in the individual's own freedoms. Sen points out, that it is necessary to focus on the deprivation of these basic needs and not on poverty (even though there may be some correlation). According to him, improving the capabilities of people has positive effects on development³⁸. For him, the counterpart of freedom is the responsibility (his integral man) and the possibility of justice, and the latter is a relevant factor for evaluating economic and social changes.

For Sen, the possibility of maximizing social welfare rests on the social participation of responsible (ethical) individuals. Sen rejects the selfish *homo economicus* of liberal ethics. According to him, man is an integral being and his economic participation in the market does not capture his social preferences, which must be added directly, making interpersonal comparisons, in a Social Welfare Function.

Sen points out that the political process is insufficient to aggregate individual preferences at the social level for several reasons. 1) does not guarantee that the individual is informed and has analyzed in detail the consequences of his decision; 2) frequently, marginalized groups are underrepresented in the political apparatus because they do not exercise their voting rights³⁹, and 3); Given Arrow's impossibility theorem, not all voting aggregation processes give consistent aggregate results, so it is necessary to redefine the possible areas of congruence and obtain the social choice of the individual in relation to those areas.

Sen's proposal provides a new mechanism of social communication distinct from the market and democracy, through which the responsible (ethical) individual directly expresses his social preferences. The exercise of social choice confronts the individual with the possibility and the need to reflect on the consequences of certain social states, which go beyond

³⁸ This proposal of Sen seems to us to contradict the facts. The lowest ranked HDI (Human Development Index) – The Central African Republic improve its HDI from 0.32 in 1990 to 0.35 in 2015. But economic development was reversed, The PPP GDP per capita (The Purchasing Power Parity Gross Domestic Product which is the one comparable between the two years) went down 33% in the same period. See Obregón, 2018b table 4.7 in Chapter four.

³⁹ Sen, 2002, p.77.

the economic relations contained in the markets. The individual who uses a large old car and pollutes the environment, and who acts in this way because everyone does, could be willing to use a new and smaller car if he knew that everyone else is going to do it. Models, for example, of multiple equilibriums, such as Tirole's model on corruption, as well as many others, show that the result obtained depends on the Institutional Arrangement imposed. In this way, there is room to ask what are the social preferences of individuals that are not expressed in the market, and Sen's social choice may be useful in these cases.

For Sen rationality is the discipline consisting of subjecting decisions and personal actions, as well as individual objectives, values and priorities, to the scrutiny of reason. Sen asks what is the use of rationality and responds that the fundamental use is that it allows us to act wisely and judiciously, that is to say that it has a normative role. Rationality can be used to explain the behavior of others, but should not be based on the narrow concept of the liberals, which assumes that others are always optimizing their own interest. Sen finds the use of *homo economicus* completely unjustified in economics, in social choice, in politics, in legal matters, and even in conflict and defense; and proposes that, we must abandon the concept of *homo economicus and its restricted rationality*. However, he says, the extended rationality of the integral man is useful to explain how to reach social decisions.

The rationality of the integral man, according to Sen, has the following limitations: 1) there is no surefire test to discriminate the rational behavior from the one that is not. The rationality of the integral man can not be expressed easily in consistent algorithms, such as the theory of revealed preferences. However, for Sen this limitation is simply an acknowledgment of the complexity of the use of reason itself; 2) depends on the person's own reasoning process and a permanent need to scrutinize with reason. Therefore, both the problems of irrational correspondence (incongruence between what is reflected and what is done), as well as reflective incongruence (not properly reflected due to lack of training or intellectual capacity) can occur. Thus, personal freedom to reason is for Sen a limitation, but also an important virtue, and is congruent with the vision of a socially responsible man able to exercise an intelligible social reasoning, the kind of man conceived by Kant, Smith and Rawls. This man is not driven by instincts, but by his moral reason, which he is in the process of constantly scrutinizing. Note that in Kant and Smith the moral rationality of man comes from his ability to understand through his rea-

son the moral law of God. Smith refers to God as the impartial spectator; Sen also refers to the impartial spectator, but is never clear whether he is referring to God or not.

Sen develops his theory of justice and ethics mainly in *The Idea of Justice* (2009). For Sen, it is not possible to find justice in Rawls's hypothetical contract, which originates in a closed impartiality to a specific community, it requires universal ethical principles that generate an impartiality open to man in general. Sen refers to the *impartial spectator* of Smith, whose requirements are that reason is used to reflect: If what is considered fair for one and for his community would be fair for others and their communities? and If the others observing us would consider what we propose fair? For him there is no social justice possible if it is not based on ethical principles of the individual behavior of an integral and responsible man who reaches these principles with the help of his reason. The ethical man not only understands ethical principles, but acts according to them. It is not, however, an isolated individual, but one that learns in his relationship with society to distinguish the moral from what is not. The benevolent feelings of man are a guide, but they are insufficient, moral conduct has to be based on reason.

Sen recognizes that there is not a single possible solution to determine which are the ethical principles that should guide individual behavior, and that different cultures, communities, groups and individuals can reach different principles. But he insists that there will always be common principles that will guide possible agreements between different individuals, groups of a community, between communities and at a global level, so that it will always be possible to move towards a less unfair world.

There are many unresolved issues in Sen's vision of justice and ethics. *First*: there is nothing that guarantees that all individuals will use their methodology of the *impartial spectator* and even less that they will behave according to the morality they discover with their reason. *Second*: there is an incompatibility between his theory of freedom exposed in *Development as Freedom* (2000) and his theory of justice introduced in *The Idea of Justice* (2009). Sen replaces Rawls's notion of overlapping consensus with that of incomplete orderings based on the discussion between different points of view on fairness. But if we accept the notion of incomplete orderings of *The Idea of Justice*, then there is nothing to guarantee that these incomplete orders will result in Sen's basic capabilities related to freedom. The freedoms of Sen do not have to be accepted by all, nor do they have the universality that he confers to them in *Development as Freedom*. *Third*: if

there is a plurality of conceptions about justice and incomplete orderings, nothing guarantees us that there will be, as he affirms, always partial solutions that reduce injustice.

Empirical international aid data does not seem to justify Sen's vision of common ethical partial orderings between diverse communities. The difference between *us* and *them* seems clear in the data; which seems to confirm Rawls' vision that west humanistic values relate only to the west. Social expenditures in developing countries as GDP percentage are in the range of 20 to 30%, international aid is only 0.2% of world's GDP⁴⁰.

The undeniable contribution of Sen is that it clearly points out one of the most important limitations of traditional economic literature, which does not emphasize enough the need to inform the individual of the consequences of social choices. As we have already seen, there are many possible Nash equilibria that are not Pareto optimal. Market equilibrium always depends on an Institutional Arrangement that defines the rules of the game. The social choice of said Institutional Arrangement is of great importance, and can not be carried out through the market because it depends for its solution of the Institutional Arrangement given exogenously. The political elections, for the reasons described by Sen, are not a sufficient solution to the previous problem, so there is always room for the social choice proposed by Sen. And it is true that this solution requires the participation of an integral man who, being well informed of the social consequences, makes ethical judgments that go beyond his personal interests. The social choice proposed by Sen enriches the delicate balance that exists between the individual and society, and therefore is an important contribution.

But, admitting the method of social choice, does not necessarily imply accepting the *rationalism of Sen's freedoms*. The great triumph of Rousseau and democracy was to free the individual from the tyranny of reason. The return to rationality is not acceptable. It is true that man can use his reason, but it is not true that he can reach unchangeable universal truths. It is true that there is room for reasonableness and for the scientific study of social problems, but it is not true that the reasonable determines social relations. It is true that there is room for the method of social choice, both internationally and locally, to illuminate different social alternatives. But it is not true that local democracy (or the political system that prevails

⁴⁰ Social expenditures come from Obregón 2018b, which uses OECD data. International aid data is our own estimation based upon World Bank Data available in the web - consulted September 12, 2018.

in each case) will always revalidate the inalienable freedoms of Sen, nor that internationally the participating countries will accept them as a guide in their actions. The basic freedoms of Sen are based on the humanistic values of the West, which nor even the West is willing to respect in the international arena. Therefore, given the current global Institutional Arrangement, it is almost impossible to obtain globally Sen's freedoms. And even if they were obtained, they would not generate economic development. The truth is that even given Western freedoms, development may not occur, as many underdeveloped countries illustrate; and even without them it can happen, as China and other Asian countries have shown. Sen does not have a theory that can explain economic development⁴¹.

It is not true that the individual always acts in society taking into account ethical considerations. Precisely what distinguishes contemporary Western societies is that the social order does not come only from ethical considerations about the reasonable. The political order (although influenced by ethical discussions) is based on the individual desire expressed in the popular vote. The great virtue of the democratic agreement is that it makes explicit the fact that we can not resolve the balance of power via the reasonable. Finally, democracy – is *based on the will of the people* – and it is the ultimate source of justice in a contemporary Western society.

And given the West's legal Institutional Arrangement (that democracy has decided), the individual in Western countries had been allowed to participate in economic activities in the large markets based on his personal selfishness – and this is the key, as Smith have shown, of Capitalism's rapid economic growth. It is true that an ethical individual is required, but not always, not in all activities. The *integral ethical man* of Sen can be used for social choices in which the markets or the political system are not suitable; but it can not, and should not, supplant neither *the will of the democratic man* nor *the selfishness of the homo economicus*. Man in contemporary western societies acts and should act as a selfish *homo economicus* in the market, as a citizen in democracy and as a citizen in social choices (in which he can be encouraged to express ethical preferences – i.e. taking social well being into consideration, but there is no guarantee that he will do so).

Economic freedom as the space in which the individual acts on the basis of his selfishness must be maintained, and does not conflict neither with the need for democracy or an efficient political system, nor with the need for some social choices taken by well informed individuals. It is not convenient

⁴¹ See Obregón, 2008a. In this work, it is shown that, in cross sectional data, there is no relationship between Sen's capabilities and economic development.

for the individuals to participate in the markets thinking mainly on the interests of the community (as would the integral man of Sen), this would transform efficient economic markets in bureaucratic slow ones.

A DIGRESSION ON ECONOMIC GROWTH

Economic growth per man in a Solow's model is due to savings and to exogenous technological development. Modigliani's life cycle hypothesis provided an explanation of how savings were decided. Therefore, the next step was to have an endogenous explanation of technological development. The contemporary Monetarist - Rational Expectations Neoclassical School developed an endogenous theory of growth in which technological development was due to human capital⁴². In this vision the main difference between developed and underdeveloped economies is the quality of human capital. And moving human capital from one country to another, it is argued is difficult, because it is connected with the whole network of human knowledge that characterize a developed economy⁴³. This explained, according to this school, why there was growth convergence between regions in a given country, but there was not absolute convergence between developed and developing economies.

In longitudinal studies human capital is closely related to technological development, but human capital cannot explain adequately cross sectional data. At the beginning of the sixties Mexico had clearly much more human capital than South Korea, even Philippines had more; yet South Korea was the one with an amazing economic growth. There was more human capital in East Europe or in Argentina than in the key Asian countries that had shown a rapid economic growth. Reality has shown that the contemporary neoclassical explanation of economic growth based in human capital was not correct. Empirical studies have found that only a minor percentage of the growth difference between countries is due to human quality distinctions, and that a more significant percentage has to be explained with institutional differences⁴⁴.

⁴² Lucas, 1988.

⁴³ Lucas, 2002.

⁴⁴ Between 25% to 33% is due to human capital, between 17% to 25% to physical capital and around 50% to institutional differences. See Hall and Jones 1999 and Klenow and Rodriguez-Clare 1997.

There have been several other endogenous theories of technological development. Among those, we would like to mention three groups of theories. The first group, argues that technological development is the outcome of scientific discoveries⁴⁵; the second group, that it is due to learning by doing⁴⁶; and, the last group, that it is the consequence of research and development⁴⁷.

Scientific discoveries no doubt are closely related to technological development; and both go hand to hand with the fast economic growth of capitalist economies in longitudinal studies. However, when one looks at cross sectional data, science does not longer seem to be the cause of technological development and fast economic growth. Think for example, on the USSR, with very rapidly scientific progress and yet was very unsuccessful in achieving the required economic growth. The USSR concentrated in military and aero-space technology, but it did not have a key element: the middle class that in a Smith's sense enlarged the market and allowed for the mass production required for technological development. What the USSR did not have was: *the dynamic preferences of the middle class as guidance of technological development*.

Learning by doing is closely related to technological development, but it does not distinguish between types of learning, workers in the USSR did learn by doing but economic growth did not happen.

Research and development has a similar problem that science and learning by doing, it is related to technological development in longitudinal data, but it does not explain well cross sectional data. Successful research and development in the military and aero-space industries in the USSR, did not produce the required economic growth.

There is no way out, economic growth at the country level has to be explained, among other things, by institutional factors⁴⁸.

Modigliani's consumption function is important as a microeconomic determinant of savings, but national savings are defined by other very relevant macroeconomic factors such as the government's policies to pro-

⁴⁵ Phelps,1966; Nordhaus,1967;Shell,1966-1967.

⁴⁶ Arrow, 1962.

⁴⁷ PM Romer, 1990; Grossman and Helpman, 1991; Aghion and Howitt,1992. D Romer, 2001.

⁴⁸ Acemoglu and Robinson 2013, present a powerful case of the importance of institutions for economic growth. Although as other exponents of Neo-Institutionalism, they focus mainly in the need to adopt the Western institutions.

mote savings and the country's export strategy⁴⁹. Asia has shown that macro-policies are a key determinant of national savings. Thus, national savings are to a large extent institutionally defined⁵⁰.

The recent technological revolution – TIC - in information (I), communications (C) and new technologies in the work place (T); has made possible the manufacturing production offshore. Thus, large multinational companies have maintained at home manufacturing services such as marketing, general management, competitive strategy and so on; but, the actual manufacturing production happens fragmented offshore in underdeveloped countries. Therefore, it is no longer necessary to export human capital or full production process technological knowledge- because large multinational have gained access to low wages in underdeveloped countries by just exporting a fragment of the manufacturing production. As a consequence, the convergence has started between developed countries and those underdeveloped countries that have participated in the TIC technological revolution⁵¹.

The TIC revolution has shown that technology is not physical capital embodied nor is it human capital embodied; nor it depends exclusively on science, learning by doing or research and development. It depends crucially on the institutional characteristics of the global process of production, and as Smith thought: it benefits a lot by the enlargement of the market.

Economic growth in China and other manufacturing centers in the new TIC revolution has happened without adopting the full set of Western institutions - as North and other Neo-Institutionalisms' argued was required. It was neither the consequence of adopting Sen's economic freedoms. It occurred as a consequence of new institutions specially developed to adapt themselves to the new TIC revolution; taking into account the competitive advantage of underdeveloped economies in low salaries, but also its traditional strengths due to a solid traditional Institutional Arrangement⁵².

Economic growth has to be explained based upon institutional characteristics and cannot be understood if one focuses only in the individual agent's characteristics as Behavioral Economics do.

⁴⁹ Since due to national accounting the difference between savings minus investments has to be equal to exports minus imports.

⁵⁰ Obregón, 2018b.

⁵¹ See Obregón, 2018b.

⁵² Obregón, 2018b.

CONCLUSION

Despite the strong rationality assumed, contemporary neoclassical economists failed to show that markets maximize social welfare, have a unique optimal equilibrium, maintain economies near their full employment level and produce endogenous economic growth. However, contemporary neoclassical economists have provided the economic profession with solid mathematical models which have not only been useful to prove the failures mentioned above, but also to further understand how markets settle prices, allocate resources and manage expectations.

The New Schools of economic thought had explored new routes to understand what defines economic equilibrium, social economic welfare, the economies capacity to remain near full employment and economic growth. Most of these New Schools have concluded that, even assuming strong rationality, the Institutional Arrangement is the key that allows contractual stability, adequate information and confidence as to the future. Therefore, both economic equilibrium and economic growth are institutionally dependent.

There are only two New Schools that were looking at new solutions as a consequence of criticizing the strong rationality of the individual economic agent: Sen's Moral Economics and Behavioral Economics. Behavioral Economics will be discussed in the following chapter. Sen's Moral Economics attempted to find the solution to the welfare maximization problem by re-defining the nature of man. Sen's solution however requires absolute external ethical values, which the individual economic agents can use as a reference. But, man is not evolutionarily made to be able to achieve such external universal truths (see chapter four). Social choices are welcome, but are by definition embedded in the Conceptual System and the Institutional Arrangement of a given society- something that Sen never fully recognizes, even though he seems to get close to it with his partial orderings. So we are back to the notion that markets cannot be shown to maximize social economic welfare, because social choice will always be relative to a specific Conceptual System and its corresponding Institutional Arrangement. The fact, is that there is not one, but a set of economic equilibriums of which many are sub-optimal and can be characterized by unemployment and/or underdevelopment; and social choice will not be enough to move these equilibriums to the optimum – which in any case is relative.

The discussion about the limitations of Sen's Moral Economics provides two important lessons. The first lesson is, that is not possible to

solve the traditional economic problems such as welfare maximization or economic development just by focusing in individual choices or in the nature of man. Whether man is rational, in any sense of the word, or irrational; to understand the key economic problems, we need to introduce institutions and what they represent - values, history and so on. The second lesson is, that the criticism of the rational economic man based in the suppose *real* characteristics of *human nature* loses sight of the fact that the soft rational man, introduced by Smith, who expresses his selfish preferences in the market, is not a description of human nature, but the recognition of a special institutional feature of contemporary Western societies. And, therefore criticisms of the soft rational economic man must be address as discussions of the alternative institutional features of contemporary societies and not as discussions on the nature of man. If anyone wishes to propose that individuals should not longer be allowed to be selfish in the large markets, he must confront the consequences from the point of view of economic growth of such a drastic change in the Institutional Arrangement. This is almost a reduction to absurdity, I know: because almost no one of the contemporary economist will feel comfortable with such a proposal. But the intellectual exercise we have done is useful, because it teaches us to be careful not to base our analysis only and foremost in the *criticism of the rational economic man* based upon an *alternative view of human nature*. These two lessons will be useful, in the next two chapters, in our discussion of Behavioral Economics.

HUMANS IN BEHAVIORAL ECONOMICS: THE PSYCHOLOGICAL ROOTS

Behavioral economics integrates psychology and economics and argues that we are *humans* and not *econs*⁵³. *Humans* are not rational, they are emotional beings who under some circumstances may take the wrong choices and therefore need help from the government. 2) *Humans* are not selfish individuals, they are altruistic and socially cooperative. They argue that there are powerful socio-economic and psychological incentives. People gets well being by compensations different from money, whether intellectual gratification, respecting others, social conventions, and social status. That explains why: paying students to study reduces the quality of their intellectual effort; charging parents for picking up late their child from a nursery had the effect that more parents did it, because they fell free to do it, once they paid for the service; payments for blood donation reduce donations; and higher wages encourage more work only if they are related to be treated well by the employer. Economic decisions, behavioral economists argue, are nor only related to prices but to human relationships and social interactions.

The scientific method in psychology has been very different than the one used in economics. Psychologists based their results in empirical findings in the laboratory, while economists study reality from an abstract deductive mathematical model. They also differ in the object under study. Psychologists are concerned with broad *human* individual and social behavior. While economist's main interests are market prices, consumer's and producer's microeconomic behavior, allocation of resources, economic value, economic growth and development, income distribution, the open economy and financial and macroeconomic stability. Economics has been able to advance, in the problems it is trying to solve, by introducing the assumption of the *economic man*- the *econ*. Which, as we had seen in the last chapter, varies widely between diverse schools of economic thought, going from a very soft version of rationality to a very strong

⁵³ Good reviews of Behavioral Economics, order from simple to complex are: Baddeley, 2017; Tomer, 2017; Cartwright, 2018; and Dhami, 2016.

one. In any case, economists are only concern with individual and social behavior to the extent that its study is helpful to solve the set of economic problems mentioned above.

Behavioral Economics can be defined as the quest to integrate psychology and economics by showing that the definition of *humans* in psychology can provide light into specific economic problems. At the outset, then, one has to understand that Behavioral Economics is not and will not be a new paradigm in economics - simple because it cannot solve the full set of problems that economics needs to address.

That emotions and group's influences do count in the individual's perception of reality and in his decisions, has been shown for decades in many laboratory findings both in social psychology and in cognitive-behavioral psychology. Therefore, to some extent, it is not surprising that Behavioral Economics has found that economic decisions are also influenced by these two factors. Therefore, the interesting question is: Whether or not Behavioral Economics has brought value added in the understanding of a relevant subset of economic problems? And the clear answer is that it has. There are five Nobel Prize winners that can be associated with Behavioral Economics: Simon (1978), Akerlof (2001), Kahneman (2002), Shiller (2013) and Thaler (2017).

In this chapter we will discuss the background and the psychological roots of Behavioral Economics and in the next we will discuss the Nudge, Behavioral Macroeconomics and Behavioral Finance. In our exposition we will pay especial attention in analyzing the value added that Behavioral Economics has or has not brought to specific economic problems. This chapter is divided in four sections. In the first one, we will briefly present the background that gives rise to Behavioral Economics. In the second, we analyze the psychological roots of Behavioral Economics and the main results found as to the behavior of *humans*. In the third section, we discuss the question of whether or not the individual confronts too many choices and in the fourth whether or not we are predictably irrational.

THE BACKGROUND

There are five reasons for the success of Behavioral Economics. The first one is that as we mentioned in the previous chapter economics only touches one of the main relations between the individual and the society

- the Economic and Exchange System - and the other two – the Integrative System and the Power System - are left unexplained. Any organization is a social micro-cosmos, where the three social systems mentioned above exist; there is an Economic, a Power and an Integrative System. Therefore, as a consequence the neoclassical economic theory of the firm, based only in the economic system, was clearly insufficient. Thus, those concerned with business organizations had to look elsewhere and, given the relevance of human relationships in any organization, psychology was a natural discipline to go to.

The second reason is that there had been significant advances in cognitive-behavioral psychology and social psychology which had shown the relevance of emotions and group influence in the individual's decision making process; therefore, it was natural to ask what happens in economics if we replace the abstraction of the *rational economic man* with *humans with emotions belonging to a social group*. The third reason is that economics and business departments became more integrated in the main universities, and therefore the business community became more influential in economic thinking. The fourth reason is the success of game theory, which provided a specific tool to test in the laboratory the hypothesis of Behavioral Economics, particularly at the time that other economists such as Vernon Smith and his collaborators started using the laboratory to explore economic thesis. And the fifth reason is that the 2008 crisis discredit the contemporary Monetarist - Rational Expectations Neoclassical School, which had become the predominant one, and which *argue that markets always stabilized by themselves*; and therefore, people was willing to look elsewhere for alternatives. In what follows we will explore furthermore each one of these five reasons.

The First Reason: The Need to Explain Organizational Behavior

Leibenstein X efficiency theory, which started with his already famous 1966 article, developed a conceptual frame to understand why firms in the optimal state of affairs do not optimize internal efficiency – they maintain only X efficiency. Leibenstein's theory borrowed behavioral insights, but it did not provide a full framework to integrate social disciplines like psychology and sociology into the understanding of the firm. The real pioneer of Behavioral Economics was Herbert Simon⁵⁴. In 1945, Simon

⁵⁴ Herbert Simon won in 1978 the Nobel Prize in economics “for his pioneering research into the decision-making process within economic organizations”

wrote *Administrative Behavior*. In this book he studies human decision making in an organizational environment. He argues that the organization influences decision making through authority, communication, efficiency and organizational loyalty. Organizational goals he affirms cannot be obtained only through authority based upon contractual agreements. To understand the organizational process, we need to focus in the sociology and the psychology of the organizations. Organizational decisions imply nor only scientific and technical knowledge, but also ethical stands. He is already critical of the Thomistic refinement, that implies the rationality assumed by economists, which he argues has "little discernible relation to the actual or possible behavior of flesh-and-blood human beings"⁵⁵. For him rationality is bounded by man's limited cognitive capabilities. Emotion helps reason in its task but occasionally it may lead us to ignore important matters. For him, individuals in isolation cannot achieve any high degree of rationality; because, there are many alternatives and endless information to be gathered to be able to evaluate them. The future is not known and can only be imagined. Man purposive behavior is docile, which means is characterized by stage of exploration and inquiry follow by one of adaptation. Memory and habit withdraw from conscious thought in repetitive situations. Attention and behavior tend to persist in the initial direction for a considerable interval of time. Organizations are fundamental to the achievement of human rationality in a broad sense. The function of social organizations is to permit stable expectations and provide intermediate objectives that stimulate action.

Human rationality gets its higher goals and integrations from the institutional setting in which it operates. "Human choice is often more nearly a stimulus-response pattern than a choice among alternatives. Human rationality operates, then, within the limits of a psychological environment"⁵⁶. For him the meaning of organizations is to regulate the behavior of individuals through appropriate stimulus patterns. The administrator does not maximize he just look for a "good enough course of action". Administrative theory is about bounded rationality, its central concern is the boundary between the rational and the non-rational aspects of human social behavior. Managers need analytical tools, intuition and judgment; to be able to respond to situations rapidly. The formal system of authority does not include the informal system, nor the propositions about the psychology of the person who is behaving. There

⁵⁵ p. 87

⁵⁶ p. 117

are formal and informal channels of communication. The revolution in information technology, he argues, will provide more tools for efficient organizations. Measuring efficiency, however, is difficult. It is key that the organized society obtains the individual's identification: identification is the process by which the individual substitutes social values for his personal motives. Organizational loyalties can be very strong, independently of the personal benefits related to those loyalties.

In 1983 Simon writes *Reason in Human Affairs*, in this book he explores the limits of reason in human affairs. He argues that reason is instrumental but does not define the goals to be achieved, which depend upon a set of values and emotions. Given the goals and the facts of reality, reason at best can tell us how to get there. He discusses subjective expected utility theory, SEU. And he argues that it is a crude abstraction that may or may not provide satisfactory solutions to specific real world problems. But he mentions that, in the laboratory in real games - as in real life - actual behavior departs from SEU mainly because human beings have neither the facts nor the consistent structure of values nor the reasoning power at their disposal that would be required...⁵⁷. Choices are necessarily made according to a behavioral model of bounded rationality, which requires three conditions: 1) Focusing our attention - a role played by emotions; 2) Generate alternatives - a process explained by cognitive psychology and artificial intelligence; and 3) Acquire facts. Behavioral choices do not optimize. Intuition follows the behavioral model but "exploits the knowledge we have gained through our past searches"⁵⁸.

The behavioral model explains how organisms, including man, possessing limited computational abilities, make adaptive survival choices. Simon explores the process of evolution and he argues that selfish competition maximizing survival in a local niche is an inadequate view of the evolutionary process. There are many niches in an ever changing world and maximization and selfishness are only a partial view of what occurs, survival requires a non maximizing process that diversifies species for their survival across many niches - nor only actual ones but potential ones - evolution cannot foresee the changes in the material world but diversifies to increase survival. Moreover, he argues altruism understood as enlightened selfishness increases fitness and the possibility of survival - that is why evolution in many cases requires that the individual develops in a group context. Therefore, evolution he argues is more compat-

⁵⁷ p. 17

⁵⁸ P. 29

ible with the behavioral model of human decision making than with the rational model. There is not one unique optimal equilibrium but many suboptimal ones. Individual decisions happen within a social context. Markets play a very important role in contemporary societies, but they do not operate in a social vacuum. Markets operate in an institutional environment that among other things control negative externalities and promote public goods. But institutions go much beyond that – they provide individuals with a reliable and perceivable pattern of events. However, institutions themselves also operate within bounded rationality.

In particular, there is not magical formula to compute social conflicting goals. Institutions, given the cognitive limitations of its members, are surrounded, like individuals, by uncertainty. Nevertheless, some Institutional Arrangements are better than others to respond rationally to problems of social choice. Markets are particularly efficient to sum up great amounts of information in the price and allow “human beings having limited informational and computational capacity to operate more or less intelligently”⁵⁹. But markets are not independent, they can only be used in conjunction with other methods of social control and decision making – like the judicial system, the social information, and the political system.

Scientific knowledge is important but it will not solve by itself critical social problems like war and peace, energy and environment or even which is the most adequate economic model. Information and knowledge is lacking and philosophical principles are relevant. Since pure altruism is not evolutionarily possible, as a first approximation we may assume that people will act from self interest. “Hence a major task of any society is to create a social environment in which self interest has reason to be enlightened”⁶⁰. Reason cannot select our final goals and there are not definitive solutions. A less ambitious goal is to enlighten self interest to broaden human horizons to understand that a viable self interest needs to look “to our living in a harmonious way with our total environment”⁶¹.

Comment

Simon’s contributions are very relevant, and they filled the vacuum left by the traditional economic theory of the firm. That is why, in 1978 he

⁵⁹ p. 89

⁶⁰ p. 105

⁶¹ p. 107

receives the Nobel Prize in economics. Simons work was path breaking and opened the way for further research integrating psychology and economics. He did show that for some concrete relevant social-economic problems like organizational behavior, the abstraction of a *rational economic man* was at best insufficient; and, that these problems can be better understood by a behavioral approach to decision making. Simons' success however, does not prove that the *rational economic man*, both in his *strong* and his *soft* versions, is not a useful abstraction for other economic problems distinct from organizational behavior. In fact, in chapter four we will show that the integration of economics with evolutionary approaches actually explains why the abstraction of a *rational economic man* is useful. Moreover, we will argue that the decision making process of *humans* is not fully described by Behavioral Economics. And that while the integration of economics with other disciplines is very welcome, we need to look beyond Behavioral Economics to understand how such an integration should be done.

In Simons' thinking we already observe one of the limitations of the Behavioral Economics' approach. The discussion should not be about the true nature of man but, *as to what is the abstraction that makes more sense to solve particular economic problems*. As we saw none of the classical economists ever thought that the true nature of man is full rationality. Markets are not *natural*. Smith's was an institutional analysis, comparing the Institutional Arrangement of England with Spain and Portugal. Free markets and individual economic freedom were much better developed in England and in this institutional feature Smith found the explanation for the capitalistic economic growth. The *free economic man* is not a characteristic of human nature, it is an institutional social design.

The *rational economic man* in its strong version was an attempt to explain market economic exchanges through mathematical models, and to a large extent was very successful. However, as we had seen, the contemporary Neoclassical School could not prove that markets maximize social welfare. A result that clearly indicates the indissoluble link between the markets and the rest of the Institutional Arrangement of society. Therefore, the real questions are not necessarily What is the nature of man? or Whether we are *humans* or *econs*? The questions are Why and when are markets necessary? What are the required institutional conditions for they to operate well? What are their limitations? and for which economic problems the abstraction of *humans* operate better than the abstraction of *econs*?

There is no question that evolution relates to our human condition, and that to understand it requires a broader frame of analysis of man than the one that can be provided by the abstraction of *econs*. But the reason to introduce the abstraction of the *econs* was not to explain our human evolutionary traits, but only to understand economic problems related to market behavior. Economics, even in the strong version of the *rational economic man*, is not about the study of human nature; it is the analysis of a given human institution and its consequences – economic markets.

The Second Reason: The Psychological Background

Behavioral Economics has reproduced in the laboratory *for economic decisions* results that were previously well known *in cognitive-behavioral and social psychology*. In these disciplines it has been shown, since many decades ago, that individual decisions are consequence of external stimuli on which the social group plays a predominant role. One of the first relevant studies was The Robbers Cave experiment, which showed how students became influenced by the *in-group* to which they belong in the experiment, to the point of becoming extremely aggressive with other students consider the *out-group*; the aggression was due to competition between the two groups for resources in a camping area. Another study was the very well known Stanford Prison Experiment, which reproduced the conditions of a jail, with students playing both the role of policeman and of prisoners, the students playing the policeman role became very abusive and authoritarian and the prisoners became submissive. Both experiments had to be stop before their initially planned conclusion, because the high and unmanageable level of aggression among participants. There is no question that we are social beings and that we are influenced by others.

It also has been shown again and again that emotions play a key part in any decision process of a human being. Emotions are an evolutionary mechanism of survival that help us discriminate which are the relevant cues in the environment. Reason in this sense is bounded as Simon argued, it is constrained to the information of the environment selected mainly emotionally. In chapter four, we will explore more the recent advances in contemporary psychology. In the meantime, let us say that psychology has left crystal clear that the human decision process is not a rational one as assumed by contemporary Neoclassical Economics. However, as we had been arguing that does not mean that the abstraction of the economic man is not useful.

The Third Reason: Join Economics – Business University Departments

The failure of economics to prove that markets optimize social welfare, as discussed in the previous chapter, opened the door for new routes of economic thinking. As economists became more and more open to external ideas, and as more and more US universities, and elsewhere, integrated economic and business departments, the influence of business organizational thinking in economics grew – and psychology had its way in.

The Fourth Reason: Empirical Possibilities

While Simon thinking in organizational behavior had been highly influential, it was not until economists started using laboratories for empirical analysis⁶² and game theory became successful, that the conditions were established for the empirical verification of Behavioral Economics. Mainly through the contributions of Kahneman, Tversky and Thaler.

The Fifth Reason: The 2008 Crisis and Behavioral Macroeconomics

The findings in the laboratory, as we will see, had as a consequence new solutions in some traditional microeconomic problems. Behavioral macroeconomics, however, did not start as a result of such laboratory findings. It was mainly the consequence of the 2008 crisis. We will argue that the findings in behavioral macroeconomics are not as sustainable as the microeconomic ones.

THE PSYCHOLOGICAL ROOTS

The social behavior of others influences individual behavior. Energy consumers, when provided information, adjust their consumption to the social reference of friends and neighbors. We tend to imitate, herd, and follow the crowd. In general, we prefer a crowded restaurant. Herding implies using collective information, which often is more accurate. Herding allows to quickly decide what to do. But there are many other heuristic - quick – rules to decide. Behavioral Economics identifies three main

⁶² Vernon Smith won in 2002 the Nobel Prize in economics “for having established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms”.

types of heuristics: anchoring, availability and representativeness.

A good presentation of the psychological roots in empirical Behavioral Economics is found in Kahneman's *Thinking Fast and Slow* published in 2011. Kahneman starts the book by differentiating between two psychological systems in human beings. System 1 is related to automatic operations and system 2 to construct thoughts in an orderly series of steps. System two has to overcome the intuitions and impulses of system 1, and therefore requires self control. However, "the thoughts and actions that system 2 believes it has chosen are often guided by the figure at the center of the story, system 1"⁶³. Children that show more self control in an experiment had higher scores in tests of intelligence and were less likely to consume drugs as young adults. The priming effect is one of the consequences of system 1. For example, voting to increase school funding was significantly higher when the polling station was in a school versus in another nearby location. People answers are sensitive to quality of printing, quality of paper, color, language used and so on. Repetition and a likable presentation produce a priming effect because it is an evolutionary trait of survival.

Cognitive ease and familiarity are required for survival. "Cognitive ease is both a cause and a consequence of pleasant feeling"⁶⁴. In a good mood system 1 operates, in a bad mood the control of system 2 over performance increases. System 1 produces illusion that may be visual, related to memory or cognitive. "The main function of system 1 is to maintain and update a model of your personal world, which represents what is normal in it"⁶⁵. System 1 is an agent with certain traits and preferences which represents reality by associations of complex patterns of links, it is a machine that jump to conclusions. Associative memory contributes to a general confirmation bias and to exaggerated emotional coherence of the story, the quality of the data used to build the story is largely irrelevant. System 1 often jumps the gun. Kahneman uses the following example. "Will Mindik be a good leader? She is intelligent and strong.... The quick answer that comes to mind is yes. But in fact there is not enough information, the next words could have been that she is cruel and corrupt.

Basic continuous assessments are needed for survival and this is the task that evolution has given to system 1. "The normal state of your

⁶³ p. 3

⁶⁴ p. 69

⁶⁵ P. 71

mind is that you have intuitive feelings and opinions about almost everything that come your way”⁶⁶. Therefore, we are evolutionarily prepared to give heuristic answers i.e. adequate and often imperfect quick answers. When emotions are high system 1 may prevail more often. There is a bias of confidence over doubt; and small numbers are taken as representative even if they are statistically insignificant. System 1 is the main reason of why the decision making is not rational. Kahneman then goes on to show some of the effects that are produced by system 1. Experts show the same or even more heuristic biases than normal people, see Gilovich et.al. 2002, Kahneman 2003 and Tetlock 1999 and 2006.

Anchoring Effect

We use any anchor as a reference for our judgment. Kahneman among many other examples provide the following: German judges with an average of more than fifteen years of experience were asked to roll a pair of loaded dice that always show 3 or 9. Soon afterwards they were asked whether they would sentence a woman to less or more months than the number showed in the dice. And finally were asked to specify the sentence they would give. On average the sentence given by the judges that had rolled 9 was 8 months, and was only 5 months for the ones that had rolled 3. The ratio of the two differences $(9-8)/(5-3)$ is 50%, a typical anchor ratio found in many experiments

Availability Heuristic

Norbert Schwarz and his colleagues observed that the task of listing instances may enhance the judgment of the trait by three distinct routes: 1) the number of instances retrieved; 2) the ease with which they come to mind; 3) the focus with content. In general: the more instances retrieved is a positive reinforcement. However, the less easy is to retrieve them is a negative reinforcement. Therefore, as the number of retrievals increases substantially it is more difficult to retrieve the experiences and the negative reinforcement dominates. For example, if a professor asks the students to recall many instances in which his class has not been very good he will end up with a positive evaluation of his class; because as it becomes more and more difficult to retrieve the negative aspects, students would become convinced that they are not sure anymore of such

⁶⁶ p. 97

negative aspects. Following this logic, people believe they use bicycles less often when they recall many rather than few instances and are less impressed by a car after listing many of its advantages. Route 1) and 2) are due to system 1, however when system 2 enters because the content is highly relevant the logic is reverse. Students whose family never had a hard attack followed the logic imposed by system 1. But, for those with family history of hard attacks, as the number of instances in which they were having safe conduct – protecting them from a hard attack – increased significantly and it became more difficult to recall the instances – the lack of easiness did not play its normal negative reinforcement role. These students felt safer with more instances no matter how difficult was to recall them.

It is very important then, to understand in which cases the ease of retrieval dominates the content – i.e. system 1 dominates system 2, this happens when people: a) are engaged in another effortful task; b) are in a good mood; c) score low in a depression scale; d) they are novice in the topic of the task in contrast to true experts; e) score high on scale of faith on intuition and f) they feel powerful.

Availability shapes the way we perceive reality. After an earthquake people buy more insurance and protective measures are taken by the government and individuals related to the dimensions of the last disaster. Slovic, Lichtenstein and Fischhoff showed that people's image of causes of death is shaped by media information and contradicts statistical facts. For example: death by diseases is 18 times more likely than accidental death, but people thinks they are equally likely. Strokes cause twice as many deaths as accidents, but people think accidental deaths are more likely.

Representativeness

Judging probability by representativeness, following the intuitions of system 1, has many virtues because it allows us to quickly discriminate the environment; but in other instances, produce wrong inferences that blatantly contradict probability theory. Personal beliefs are guided by personal experience and are difficult to modify just with information. System 1 jumps to causal explanations that may be unjustified. Kahneman puts the example of the following statement: “Depressed children treated with an energy drink improve significantly over a three-month period”; system 1 jumps then to the conclusion that energy drinks reduce depression, which is wrong – the fact is that depressed children improve by themselves, no

matter what they do, they regress to the mean. System 2 however, can be trained to distinguish cases like this and come up with the right conclusion; example, using a control group not drinking the energy drink would show that the drink is not the cause of the reduced depression.

System 1 builds good coherent stories, which however may turn to be no right. Hindsight bias however underestimates how much we were wrong in the past, and make us believe that we do know something about the future – there is a demand for illusory certainty. That is why “high subjective evidence is not to be trusted as an indicator of accuracy”⁶⁷. In general, “organizations may be better able to tame optimism”⁶⁸.

Frames

Due to system 1 people decides differently depending how a question or a sentence is framed. Example: Physicians were asked upon whether or not use surgery for lung cancer, knowing that long term survival rates are better that radiation but short term mortality rates are higher with surgery. When short term mortality rates with surgery were frame as “The one-month survival rate is 90%” 84% of physicians choose it, when it was frame as “There is 10% mortality in the first months” only 50% choose it. When people is exposed to several rounds of the framed information some of them become rational and are less influenced by the frame, but others continue to be highly influenced. Framing is relevant in real life, for example if people is asked to check a box only if they do not want to donate organs there are many donators, if people is asked to check a box only if they want to donate organs there are few donators.

Memory

Memory is psychologically distorted. Many studies show that, due to system 1, we remember the most intense moment – the peak – of a biological episode of pain or pleasure but not its duration. In fact, we tend to remember our lives and to judge other people lives by critical peak moments. In an experiment Ed Diener found, that people judges other people life happiness not by how long they lived but by the peak moments in their lives. Our lives are nothing else than psychological stories. Therefore, there cannot be consistent rational preferences through time.

⁶⁷ p. 220

⁶⁸ p. 264

Regret

Due to system 1 people take decisions to avoid regret.

Prospect theory

Prospect theory was developed by Kahneman and Tversky as a descriptive theory capable to take into account the systematic violations of the axioms of rationality in choices between gambles. This theory has three main differences with utility theory: 1) It has a reference point which is relevant for the decision; 2) it takes into account loss aversion; 3) probabilities and decision weights are psychological

Reference Dependence

Utility from outcomes is relative to some reference outcome. The domain of gains is defined when the outcome obtained is equal or greater than the reference; the domain of losses when it is less.

Loss Aversion

We are driven more strongly to avoid losses than to achieve gains. "... it is the gravitational force that holds our life together near the reference point"⁶⁹. Where both gains and losses are possible loss aversion causes extremely risk-averse choices. When only gains are possible people prefer smaller certain gains than higher probable gains. When a loss cannot be avoided people prefer a probable higher loss rather than a certain smaller loss. Thus, interestingly enough people is risk averse both when only gains are possible and when both gains and losses are possible, but they become risk seeking when only losses are possible. In all cases people tries to preserve as close as possible to the status quo; a behavior trait which is an evolutionary heritage. "Animals, including people fight harder to prevent losses than to achieve gains. In the world of territorial animals, this principle explains the success of defenders"⁷⁰. Most human laws are asymmetric; they restore losses but do not compensate for foregone gains. In *Misbehaving*, Thaler would argue that prospect theory and loss aversion explain the endowment effect- the fact that people "value

⁶⁹ p. 305

⁷⁰ p. 305

things that were already part of their endowment more highly than things that could be part of their endowment, that were available but not yet owned”⁷¹. Prospect Theory gives rise to the fourfold pattern-see below.

Psychological Probability - Rare Events

In utility theory probabilities and decision weights are always the same; in prospect theory decision weights are defined psychologically. An unbelievable example that Kahneman puts is that in a game in which red marbles win a prize, 30 to 40% of students select an urn with 8 red marbles in 100 versus another with 1 marble in 10 which has a higher probability of success. Concurrent decisions probabilities are most often not calculated. And reversals occur when people decide upon a join scenario versus the two parts of the scenario isolated. Example, if you are offered a choice between the following two bets: 1) 11/36 to win \$160, 25/36 to lose \$15 versus 2) 35/36 to win \$40, 1/36 to lose \$10; safety dominates and most people chooses 2). But if you ask people to own the bet and to tell you How much will they sell it for? It turns out that the selling price is higher for bet 1) than for bet 2). A reversal has occurred – a result which is clearly incongruent. In both cases choices are influenced by system 1. When consider together bet 2) dominates for safety, when they are separated and a price is asked to sell them bet 1) dominates for the high \$160 number. The fact is however, that bet 2) has almost the same probability payout than bet 1). Therefore, people do not decide base upon probabilities, but base upon psychological decisions weights. Lichtenstein and Slovic 1971 showed that Preference reversals hold for experience players (see Tversky and Thaler 1990).

Low probabilities are subjectively over-weighted, while high probabilities are subjectively under-weighted. Rare events if relevant are over-weighted and if irrelevant are neglected.

The Fourfold Pattern

1) High probability gain – certainty effect - risk averse – fear of disappointment – accept unfavorable settlement – this is utility theory; 2) Low probability gain – possibility effect - risk seeking – hope of large gain – reject unfavorable settlement – explains why people buys a lottery ticket; 3) High probability loss - certainty effect – risk seeking – hope to avoid loss

⁷¹ P. 18

- reject unfavorable settlement – explains desperate gambling in a casino;
- 4) Low probability loss - possibility effect – risk averse – fear of large loss
- accept unfavorable settlement – explains why people buy insurance.

Risk, Uncertainty and Ambiguity

In traditional economics risk is given by the objective probability distribution over a set of possible outcomes related to the economic decision. Under uncertainty no objective probabilities can be identified which can be universally agreed upon. Therefore, probabilities are obtained by a Bayesian approach. Once Bayesian probabilities are obtained uncertainty problems are resolved as if they were risk problems. Under ambiguity there is not enough information to form Bayesian probabilities, but anyway the modern ambiguity aversion literature requires decision makers to form an immediate probability assessment of an event by recursive and other methods. Ambiguity can be seen as source-dependent uncertainty. Many of the ambiguity models in traditional economics do reduce themselves to a risk problem as to the way they are solved. Ambiguity aversion has been shown to be related to fears of negative evaluation of others and to one's competence in the problem, see Curley et al., 1986; and Trautmann et al. 2008. In the three cases – risk, uncertainty and ambiguity - probability weighting is linear - and the attitude towards risk is captured by the shape of the utility function. In portfolio theory, for example, it has been empirically found that most investors are risk averse because they diversify between bonds and cash which means that their utility function is concave.

In Behavioral Economics decision weights are not equal to objective probabilities, they are psychological and therefore subjective – the decision maker's own perception of the objective probabilities – therefore there is a non-linear probability weighting. In traditional economics the carriers of utility are the final levels of wealth and there is no distinction between gains and losses, in Behavioral Economics the carriers of wealth are deviations of actual wealth and therefore utility differs in the domain of gains and losses. In prospect theory there is concavity of utility in gains and convexity in losses. As for ambiguity, Behavioral Economics recognizes that they may be value in waiting for additional information. In behavioral Support Theory due to Tversky and his collaborators, the support for one hypothesis over another depends on how they are framed and how events are subdivided.

Sociality, Inequity Preferences and Altruism

Empirical results are often obtained in Behavioral Economics in the laboratory using game theory as a reference, the main result found is that members of a society not only compete, they cooperate. The most replicated game is the *Ultimatum Game*. In its simplest form player A is given a sum of \$ 100 – and can offer any amount he wishes to player B. If B rejects the offer. Player A has to return the \$ 100 and neither player gets anything. The result is that the offer is often very generous and that even offers as high as \$ 40 or slightly more are rejected Why? If B was purely rational \$1 is better than nothing and he should accept it. And player A knowing this should offer just \$1 Why It does not happen this way? Because B does not want to be treated unfairly. Trust, reciprocity and inequity aversion play a role in economic decisions. In public goods games experiments people are generous. People go as far as paying to punish uncooperative players. In the dictator game in which the player A is a dictator that can give whatever he pleases and keep the rest, surprisingly enough 74% divide the money equally and in the punishment stage 81% choose to share \$10 with a fair allocator instead of \$12 with an unfair one. In public good games the standard traditional economic prediction that no one will cooperate turns out to be wrong; on average people will cooperate half their stake to the public good. Cooperation can be maintained even in repeated games if players are given the opportunity to punish those who will not cooperate. Cooperation, trust, inequity preferences, punishment of antisocial behavior even at one's own cost and altruism are social behaviors that contradict the neoclassical predictions of selfishness individual optimization.

The model of self-regarding preferences explains properly the behavior of competitive experimental market subjects, see Roth et al., 1991. Individuals exhibit self-regarding preferences in anonymous, large group, market situations but exhibit other-regarding preferences in small groups or in bilateral interactions, see Fehr and Schmidt 1999 model.

In models of other-regarding preferences individuals also care about other payoffs in a reference group. Preferences may be modeled as interdependent – that is actions being reciprocal to others' actions whether they are selfish or altruistic; they can be modeled as independent of others' actions; or may be hybrid. The models could also include some form of social maximization that the individual pretends, such as the utility of the poorest members of society.

Direct democracy voting has been shown to be better explained when social preferences are included, 2/3 of subjects prefer a policy that promotes equity and only 1/3 prefers a policy that promotes efficiency, see Bolton and Ockenfels 2006.

Income, Happiness, Adaptation and Time

It has been shown through happiness studies all over the world that income has a satiation level beyond which more income does not translate into more well being. Happiness is a psychological dimension related to the experience of spending time with people you love and who love you. There is no way to dissociate utility from the whole psychological experience of living, which is very complex and it is not steady along time. Adaptation happens to new circumstances in life and preferences change. Paraplegics are not always in a bad mood, they adapt. In many choices time is neglected, "causing experiences that will retain their attention value in the long term to be appreciated less than they deserve to be"⁷². Time is a psychological dimension.

Kahneman concludes that *humans* are not irrational, but are not well describe by the rational model which imposes a coherence of choices across time which "demands adherence to rules of logic that a finite mind is not able to implement"⁷³. *Humans* often need help to make more accurate judgments and better decisions, and in some cases policies and institutions can provide that help⁷⁴. For Kahneman, "the assumption that agents are rational provides the intellectual foundation for the libertarian approach to public policy; do not interfere with the individuals right to choose, unless the choice harm others"⁷⁵. But freedom has a cost when decisions are made unaware or uninformed. *Humans* in opposition to *econs* need help in their decisions. System 1 is necessary for survival and quite useful for decision making, but heuristic responses may be wrong sometimes and may require the assistance of an inform system 2. "Organizations are better than individuals when it comes to avoiding errors, because they naturally think more slowly and have the power to impose orderly procedures."⁷⁶.

⁷² P. 406

⁷³ P. 411

⁷⁴ p. 411

⁷⁵ P. 411

⁷⁶ p. 418

Morality and Social Identity

Traditional economics has seen morality as the consequence of maximizing one's own self interest. In an experiment Fischbacher and Föllmi-Heusi 2013 showed that even though it was beneficial to lie only 22% of the subjects did lie as much as they could, 38% did lie but less than their own personal interest indicated and 40% remain fully honest going against their own self interest. Gibson et al., 2013 showed that the extent of lying is sensitive to the incentive to lie. Vanberg 2008 shows that people have a preference for keeping their promises.

Individuals identify themselves with social categories, and each social category is governed by a norm that specifies the behavior that a member must follow, see Akerlof and Kranton 2005; and there is more favorable behavior for *in-group* members, see Tajfel and Turner 1986 and Mcdermott 2009. Priming subjects to induce group identities can explain in experiments the choices of subjects, see Benjamin et al., 2010. Akerlof and Kranton, 2000, 2005, 2008, have shown that might be optimal for organizations to alter their member's identity, so that they become insiders who internalize the mission and objectives of the organization.

Pay-for-performance incentives can only be applied to observable and verifiable outcomes, and may have the consequence of employees' diminished effort in unobservable and unverifiable ones. Extrinsic motivation related to external material incentives may not work well in many situations. In gift exchange games, negative or positive extrinsic incentives may reduce the effort level; Titmuss 1971 argues that blood donation is higher when no extrinsic incentives are used.

Akerlof and Kranton (2010) argue that identity economics "yields a theory of decision making where social context matters"⁷⁷. It describes how people's identity notion as to who they are - associated with beliefs about how they and others are supposed to behave - "play important roles in how economics work"⁷⁸. People care about being fair and being treated fairly as laboratory experiments have shown. -But in the real world, individuals' conceptions of fairness depend on the social context-⁷⁹. Identity implies identity itself, norms and social categories. There is an interplay of tastes and norms. Identity economics: first, associates individuals with particular social categories; second, specify the prevailing norms

⁷⁷ p. 6

⁷⁸ p. 4

⁷⁹ p. 10

of such social categories; third, posit individual gains and losses – given identities and norms; and fourth, applies standard economic analysis to describe the decisions. A firm works well when employees identify with it, good schools transform students' identities and norms. People often do have some choice as to their identity – choosing a school or a job and so on. – Choice of identity, then, may be the most important *economic decision* that a person ever makes”⁸⁰. Norms and boundaries of race, ethnicity and class limit what people can be. Identity sets limits which “are the most important determinant of economic position and well being”⁸¹.

The crucial role of identity, they argue, has long been established in social psychology from the Robbers Cave experiment in 1954, previously mentioned, to Tajfel and others lab experiments. Chen and Li (2009) have shown that even when monetary costs are involved people gave more to *in-group* members, rewarded *in-group* members more and punish *out-group* members more. In social psychology it has been shown that priming - i.e. reminding – people of their racial, gender or ethnic identities change their behavior. Hoff and Priyanka (2004) have shown that even when monetary incentives are involved priming works. In a trust game, at Harvard, it was shown that how much money is giving back to the sender is influenced by race or nationality. It has also been shown that gender changes behavior in public good games.

Identity economics follows Gary Becker's tradition of broadening economics to include non-economic motives, but instead of focusing in how prices and income affect behavior it focuses in how the social context define preferences –tastes- that influence behavior.

Becker and others included non-economic motives in the utility function mainly to study the effect of market behavior and monetary incentives in individual behavior. For example, Becker argued that a competitive market would eliminate discrimination, because firms that hire the most efficient worker will outperform and eliminate from the market the firms that choose workers based in discrimination. Following this logic, it can be shown that the costs and benefits of having children will affect fertility rates, and that a marriage tax will affect marriage rates. Becker's (and followers) research focus in how prices and income affect behavior.

In identity economics people internalize norms and adhere to them because they want to do so. “...people desire confirmation of their beliefs. When actors with such utility functions interact, groups, norms, and

⁸⁰ p. 15

⁸¹ p. 16

identities emerge”⁸². Firms invest in making workers insiders rather than outsiders; discipline in the Air Force aims to alter airmen’s state of mind. In both cases the idea is to change the individuals’ preferences. In work groups, it was found that productivity varies less in cohesive groups. Worker identification is perhaps the dominant factor in the success of an organization. And – loyalty to one’s buddies is part and parcel of all accounts of military life–⁸³. Norms, roles and traditions do count “Women, even when they work more hours outside the home and supply the majority of the income, do more of the housework”⁸⁴.

The economics of discrimination is a good place to appreciate identity economics’ contributions. In Becker’s theory of taste based discrimination, white employees and white workers dislike black workers. In Arrow’s theory of statistical discrimination, whites discriminate against blacks not because of social distance, but because they believe they have on average low skills, which ends up being a self fulfilling prophecy. Both theories can explain overt discrimination which still exists, and both will argue that the market will reduce it, which has happened. But other facts cannot be explained by such theories, such as: the high incarceration rates of African Americans, when it is a fact that crime does not pay in economic terms; the lower employment rates in African Americans versus other minorities; the fact that there is a huge divergence of outcomes among African Americans; a rise in single parent families; incarceration rates and non employment happens at the same time that the fraction of African Americans with middle income is increasing; the rate of return of skill-acquisition is higher for African Americans than for whites, but they have higher levels of drop outs.

The choice of an African American is whether to play the role of an insider, working with whites and loose identity utility for betraying the African American community values, and suffer the lack of acceptance of whites; or, play the role of an outsider to the white culture, gaining identity utility for maintaining the African American values. This explains why some chose to integrate – be an insider - and some to oppose the white system – be an outsider. Policies will not be very successful unless they change the identity paradigm through one of the following routes: 1) Eliminate the distinction between white and blacks in the *insider ideal*;

⁸² p. 35

⁸³ p. 56

⁸⁴ p. 93

2) Change what it means to be black, so that choosing to be an insider in the white world is not longer judge as betrayal of the African American values; 3) Change what it means to be black, so that choose to be an outsider is not longer viewed as a behavior to emulate.

Identity impacts behavior and explains choices that yield no economic benefit – which can be nor only costly, but uncomfortable and even injurious. It can explain us for example: why many public goods are provided voluntarily – people do not always free ride even when they have the opportunity; why voters not only vote for their narrow economic interests, but also taking into account norms and ideals. Identity clearly influence choices. But, to some extent people can also often chose their identity, examples: choosing whether to become a mom that stays home, or pursue a professional career; choosing which school to attend; choosing how much to integrate, being a migrant

Comment

Through many examples and experiments Kahneman carefully and patiently shows that the strong notion of a rational man, with consistent preferences through time, cannot be sustained given the psychological knowledge that we have of human beings. The psychological dimension of the human mind is a reality that cannot be denied. As we will insist in chapter four, imagination and reality are to a large extent psychologically identical, because after all reality for us is nothing else than images store in our minds.

The delicate balance between psychological well being and our capacity to reason properly is something which Kahneman does not fully explore, but it is a fact that under emotional distress our reason – system 2 – does not operate well⁸⁵.

Kahneman's system 1 is due to our evolutionary heritage. The evolutionary reason for system 1 to exist is: that it is very helpful in a rapid changing uncertain environment; in which, survival requires rapid responses to threat signals, time of response is more critical than accuracy. The psychological dimensions of the human mind are required for survival. To survive in an uncertain risky external world, human beings seek refuge in an imaginary psychological world that allows quick responses, reduces stress and permits flexibility in responses through creating alternative imaginary scenarios.

⁸⁵ Obregón 2013a.

When the world is uncertain, the status quo gained through thousands of years of adaptation is highly valued. People in this situation is uncertainty averse, but this aversion cannot be described in a probability sense, like for example choosing a lower variance of returns. Uncertainty aversion is just fear as to the unknown, in a world of existence which has proven to be a risky. In such a world: what we have is more relevant than what we can obtain (the endowment effect); we make inferences from the small available information around us (versus statistically considerations); we respond emotionally (because emotions are the consequence of thousands of years of successful adaptation); we follow the herd, because survival requires belonging to the group and because group behavior happens according to an evolutionary accumulated knowledge. The best guess is that the group is correct. Animals guessing the opposite would not survive. We have a selected psychological memory, because it helps to reduce the stress of past undesired events and help us to maintain optimism which is required for survival. Stress produces cortisol that may destroy our cells and neurons. Dopamine and oxytocin in the other hand are produced with human interaction with others that we love, and they give us an optimistic feeling of life that is required for survival. Others are necessary for survival, nor only in an economic or social sense, but even in a chemical one.

Due to evolutionary reasons, we belong to a group; then, it is not surprise that the group has a strong influence in our judgments and perceptions. The effects discussed by Kahneman and Tversky have been known in psychology since decades ago, and they are consequence of our emotional equipment for evolutionary survival. Man belonging to African and Asian primitive tribes usually remember small details from their environment which are cues used to, for example, find their way back home. A western man does not remember such small details, because he would find orientation from the positions of the sun or the moon or from a compass, if he has one. Evolutionarily, we are made to pay attention to small things and to be influenced by them, because they provide information; a small movement in a plant may uncover a dangerous animal. Anchoring, availability, representativeness, loss aversion, a psychological selected memory and being influenced by frames are evolutionary survival emotional traits which do not contradict reason; but, instead help it to achieve better survival decisions. All these psychological traits do not mean that that we are irrational *humans*; emotions and reason are just parts of one integrated brain, they cannot be separated.

The fact that the superior survival answer in an uncertain world is given by our psychological characteristics, does not mean that we are irrational/or non rational. The brain is only one, and works together, and involves both our emotions and our reason. In normal psychological conditions reason –system 2 - is an important complement of our emotions, and it is also a surviving evolutionary feature of the more complex social animal that human beings are. Our superior capacity for reasoning is due to a more sophisticated language consequence of a more intense social life in larger groups (see chapter four). Reason is not disassociated from emotions; it is a complement of them. The brain is only one and we are evolutionarily built to use all of it. However, reason from an evolutionary point of view is not the same as economic rationality. The rational economic man is an abstraction which is useful for some specific economic problems; but, as we have been insisting, it is not a description of human nature.

Soft rationality: As we have mentioned in the last chapter, there are diverse abstractions of the economic man; and nor all of them require the strong version of the rational economic man, proposed by the contemporary Neoclassical School. We can forget about the assumption of consistent preferences across time just by recognizing that there is future uncertainty in the Keynes-Knight sense. Economic agents do not need to specify their whole future preferences to transact today. In fact, even quick emotional buys send market signals. For example, fast moving consumer goods bought by impulse do provide a market signal. One of the virtues of those signals is that they are transmitted as Hirschman argues through actions – exit. And, they are transmitted fast and for a large number of transactions. There is no question that prices are defined by supply and demand. Whatever the elements of demand are, as long as they remain somewhat constant, they provide information to the producers, which is the key of the relevance of the markets both to properly allocate resources and to stimulate technological development and economic growth. In a soft version – as in Smith's writings - the abstraction of a rational economic man only implies institutionalizing economic individual freedom through allowing *the markets to work*. This soft version is compatible both with system 1 and with system 2 behavior.

Strong rationality. In its strong version – contemporary Neoclassical School - it implies coherence and stability of preferences through time and several other assumptions, as we saw in the previous chapter. The strong version is not compatible with system 1 behavior non-aid by sys-

tem 2. In its strong version the rational economic man implies the use of reason for sophisticated ranking of preferences, provide coherence to the preferences and for a proper analysis of alternatives. But it must be pointed that the strong rationality does not refer to an isolated individual, but to one that receives proper information and aid from many organizations and other individuals that are also in the market place. One of the main functions of the markets is to inform the individuals and help them in their analysis, this in itself is one of the largest business in the contemporary market economies.

The fact that, given certain scenarios, we respond emotionally and even incorrect do have relevance for some economic and business problems like organ donation, individually selected saving rates or impulse buying; but, its role in generally, in real markets, should not be overemphasized. Let us look again some of the examples that we have analyzed: 1) *The Anchoring Effect*. The example of the judges: in the real world judges have social objective parameters for their sentences –like jurisprudence, and enough time to consider and analyze whether they are being *just* compared with other sentences; which does not exclude that certain psychological parameters like sex, race or empathy may be of influence in some cases. But, there is clear objective parametrical information available, time to take the decision and even the opportunity to discuss previously with other judges or legal assistants. What judges have in the real world, and is lacking in the experiment, is group institutional information and support. 2) *Availability*. The fact that those with a history of family hearth attacks were not influenced by system 1 (in the example already presented above), illustrates very well the point we want to make. Many of the factors under which system 1 becomes irrelevant: *do happen in real markets*. Markets are not only composed of individuals, but also of firms which only business is to provide information and advice to the customers. There may be market failures, but markets do have organizations which unique business is to help the customers to understand their alternatives and to analyze them properly. Quick emotional buys⁸⁶, made without much thinking, are relevant and they may be explained by Be-

⁸⁶ One has to be careful with what one means by emotional buys. All buys are emotional because human beings are emotional beings, but the fact that they are emotional does not mean that reason is not being used. If a customer buys an expensive sport car which he really does not need, it is an emotional buy, but it is not a mistake due to system 1. Most likely system 2 spent quite a bit of time analyzing the decision. And from the point of view of the customer's satisfaction it may be a very good decision. Moreover, the fact that the customer analyses many variables beyond only price does not mean that he is irrational.

havioral Economics⁸⁷. But even quick emotional buys are not the end of the story. Think in a pen or a razor, if there is no quality the brand does not last in the market. Gillette or Sheaffer are not brands which prestige was made by selling - by surprise - to the customer, appealing to his irrationality. Customers do go home and like or dislike the product, and buy or not buy again, and customers do listen to expert's opinion, whether it is in food or in wines or in any other article. 3) *Representativeness*. Since we live in a world in which providing information is also a business, quick jumping emotionally to wrong conclusions does not necessarily mean that customers will act based on them. Available information in the web or consulting experts may convince the customers otherwise. All this however, we insist, does not mean that there are not market failures that require attention; but, it does mean that individual decisions, especially repetitive or unique relevant ones, are seldom made only in emotional basis. 4) *Loss Aversion and Prospect Theory*. They may explain why people do not want to sell their houses at a price lower than the one at which they have bought, but their intention is not the main determinant of the price at which they will actually sell. If there are no buyers at the price at which they would wish to offer their property; experts will convince them that they have to lower the price, and they will. 5) *Frames*. Physicians in the experiment did respond according to the frame. But in real markets, hospitals and groups of experts carefully analyze the information at their disposal before making recommendations. Free information is available even for non-experts; look, for example, at the information available in the Mayo Clinic Web. Markets are not only made of isolated individuals, but also of organizations and firms which business is to provide information and analysis of the possible alternatives.

Therefore, while the rational economic man - in its strong version - may be an abstraction that do not correspond to reality due to: psy-

⁸⁷ It is not very clear how much marketing has learnt from Behavioral Economics. Kotler (2016) has argued that Behavioral Economics is just another word for marketing. Marketing he argues has for decades analyzed the actual behavior of the customer. This bring us to a relevant point, business is the art of creating market failures; the perfect competition economic model only works under the assumption that each competitor is trying to outcompete the others. Economics as a theory of the aggregate is a good theory. But, price theory as a description of the micro-cosmos that the competition in each product in each market represents is a lousy explanation, such competition involves many other variables besides price, this vacuum has been felt by marketing for decades which of course has used psychology and sociology for its purposes. One of the reasons Behavioral Economic has been more successful in microeconomics than in macroeconomics is precisely because it is closer to actual individual behavior, this is its strength, but also its weakness, because it makes aggregation awfully difficult if not impossible for some problems.

chological influences; informational, educational and knowledge market failures; and to uncertainty as to the future. It is also true that the weak rational, psychological man, dominated by system 1, is neither a good abstraction. Markets have two characteristics which make them not suitable to be fully described by the *humans* of Behavioral Economics. First, many transactions are repetitive, customers buy the same product many times, people learn from previous mistakes, and have time to evaluate the product in order to decide the next buy. Second, for relevant unique transactions customers use time, effort and money to buy and understand expert's information. There are of course market failures, but even most of these are not due to individual psychological features; but to other more fundamental factors like lack of information, education or knowledge.

There is one large segment of the markets dominated by quick psychological emotional impulses, which is fast moving consumer goods, supermarkets as an example. And these may be partially explained by mistakes due to system 1. But even in this case, repetitive buying puts some constraints on impulse buying. And can also being partially explained by informational searching costs that are too high giving the relative low price of these products.

We should not confuse: 1) individual responses without organizations helping them with information and analysis, with real markets in which such organizations do exist. 2) market failures to provide adequate information to the customer that do require government regulation or intervention, with impulse buying due to the psychological characteristics of system 1. 3) lack of knowledge or insufficient education, with a fast inadequate response. Kahneman's example that people usually answers wrong the following question: a) a bat and a ball cost \$1.10; b) the bat costs one dollar more than the ball; c) How much does the ball cost? *is clearly related to lack knowledge*. Any person well educated in mathematics will immediately recognize that a simple equation will solve it. 4) Individual preferences to sell or buy at a certain price, with the price at which they will have to transact giving real market forces.

We have to be very careful as what do we mean by rational economic man. Behavioral Economics defines him as one who has strong rationality and opposes him to *humans* who are dominated by system 1 and therefore are either irrational or non-rational (depending upon the author; Kahneman uses non-rational and Ariely uses irrational). But, there is something in between a man that uses both his emotions and his reason and is dominated by neither of them; but who do not satisfy the assump-

tions of the strong rationality – this is the soft version of the economic man; which as we will see in chapter four is the one that better satisfies our evolutionary traits.

Selfishness. As we will argue in chapter four we are born with two evolutionary instincts, selfishness, for individual survival, and belonging, for group survival. And since group survival is evolutionarily speaking more critical, normally the belonging instinct guides and redirects the selfish individual instinct. Therefore, in societies with different Conceptual Systems and their corresponding Institutional Arrangements, the social expression of individual selfishness is also distinct. Individual selfishness goes all the way from being forbidden as a social expression, like in primary societies, to be openly allowed in the large economic markets in Western contemporary societies. Therefore, one should not discuss whether man is naturally selfish or altruistic. Altruistic and social cooperative behavior is a consequence of the strength and the particular characteristics of the Integrative System in each case.

As we argued in chapter four, the laboratory findings that members of a society not only compete, they cooperate and display altruistic behavior, are a consequence of the very solid Integrative System that exists in developed economies; as we mentioned previously, social expenditures are between 20 to 30% of GDP. But that does not mean that man is, by nature, altruistic. While altruism and social cooperation is very high inside the developed economies, it is almost non-existent in the international arena. At the global level, the world economy presents us a *Real Global Dictator Game*, which results in minimal altruism-due to the extreme weakness of the global Integrative System; international aid is only 0.2% of GDP, and even some of it is conditioned to the interests of the donor.

We should not confuse individual selfishness as an evolutionary trait with individual selfishness in a social setting. Individual selfishness as an evolutionary trait is almost always guided by another powerful evolutionary trait – belonging. Belonging to a group or society is necessary for survival, therefore it is the Integrative System of such group or society the one that defines the individual's social role and how the individual should channel socially his evolutionary selfish instinct. In many societies the individual is not allowed to behave selfish in any social setting, his social role is fully defined and society takes care of the individual's evolutionary needs of survival. It is a particular institutional feature of contemporary societies that individuals can express their selfishness through market actions. To show the virtues of such specific institutional setting

was Smith's purpose when he wrote *The Wealth of Nations*. But the fact that markets exist as an institution, and that individuals are allowed by the contemporary Western societies to behave selfish in this particular setting, does not mean that it is the only arena in which the individual and the group or society interact. The main interaction actually happens through the Integrative System; which define the set of values, norms, institutions and so on.

The fact that one of the values of contemporary societies is that the individual is allowed to behave selfish in large market settings, explains why individuals exhibit self-regarding preferences in anonymous, large group, market situations; Roth et al., 1991. When such institutional market setting does not exist, or it is weakly defined, the individual does not express any longer only selfish preferences because his relationship with the society or the group goes well beyond his economic relation, that explains why individuals exhibit other-regarding preferences in small groups or in bilateral interactions; Fehr and Schmidt 1999 model.

Since the basic relationship of the individual with the group or society is through the Integrative System, due to the belonging evolutionary trait, it is then to be expected, that outside well established market institutional interactions, the behavior of the individual does show cooperation, trust, inequity preferences, and punishment of antisocial behavior even at one's own cost and altruism.

We must not confuse the evolutionary characteristics of man (i.e. the evolutionary traits of human beings), with his behavior as an economic man in a market setting, which happens to occur only due to the social institutional permission of contemporary societies. Moreover, that there are monetary benefits and cost involved, does not mean that the relationship happens through the Economic and Exchange System. In today's contemporary western economies 40% or more of the Gross Domestic Product ends up in the government, not due to economic transactions but mostly to political decisions. And how this money is used, is also a political decision. Social expenditures in some societies are as high as 30% of Gross Domestic Product – and they are not defined by economic transactions.

A large part of the life of a contemporary economy is defined through the Integrative and the Power Systems. It is because contemporary societies have given an economic solution to the Integrative System via government participation, that they can allow the individual to be selfish in the market interaction. There are economic situations, defined both by the

Integrative and the Power System, that are not commanded by the Economic System which is characterized by exchanges. The economic man in its soft version was related to the proposal that market relationships should be allowed by the society. And the economic man in its strong version was the attempt to show mathematically: how does the price system explain the allocation of resources in a market economy. But nor even Samuelson, who created the initial strong version of the economic man, ever thought that the market was the only relationship between the individual and the society – after all Samuelson was a Keynesian.

Economic problems cannot be solved only through the markets; economic convenient equilibriums also require a proper Institutional Arrangement. Therefore, economics cannot be limited to the analysis of choice data as it can be obtained through the markets; other sources of data are welcome such as survey evidence, forums of discussion, experimental evidence, neuroeconomics evidence and so on. To choose the proper Institutional Arrangement representative democracy may not be enough, and as Amartya Sen has argued - the direct participation of individuals in other discussion forums may be required. But all of this, do not mean that choice data as it is transmitted through the markets is not fundamental. While markets cannot do it all, they cannot be replaced by bureaucratic institutions without jeopardizing economic growth and an adequate allocation of resources.

It is not clear that the individual's behavior is always or even mostly defined by the individual's preferences. In many societies the role of the individual has been, and in some still is, very well defined. Thus, the critical discussion is not only whether the individual has selfish preferences or other regarding preferences, but in which institutional settings they express themselves. The whole question as to how, historically specific, Integrative, Power and Economic and Exchange Systems evolve in particular societies is key to understand the dynamics of the relationship between the individual and the society.

The discussion of which is the nature of man and whether his preferences are selfish only or also regarding others, misses the whole point that the evolutionary traits of man express themselves differently in distinct social institutional settings. The whole purpose of economics is to explore one of such particular settings, the large markets in Western contemporary societies, where the individual is socially allowed to express freely its selfish preferences; which does not mean that the individual does not have other regarding preferences in other settings. Therefore, discover-

ing through laboratory experiments or other settings that the individual does have others regarding preferences in relations that involve monetary benefits and costs is only to be expected, and it is not yet that valuable by itself – unless it can be shown to be useful to solve particular economic problems, and that is where the discussion should be centered.

It is not evident that the individual always defines his behavior through maximizing or satisfying his preferences, should they be selfish or regarding others. It is not clear that individuals always behave in a certain way because it maximizes or satisfies their utility function. Are ethical decisions done because they maximize or satisfy the utility of the agent deciding to behave ethically? We will argue that the answer is no. The individual may behave out of duty or playing a social role that does not have anything to do with selfish preferences or others regarding preferences. His preferences may not be the only thing that motivates behavior. The individual may cooperate out of a sense of duty. Cooperation, trust, inequity preferences, punishment of antisocial behavior even at one's own cost and altruism are social behaviors that do contradict the neoclassical predictions of selfishness individual optimization, but that does not mean that such behavior is explained only for other regarding preferences. Nor only the individual may not be optimizing - he may only be satisfying himself; but, even more important, he may not be calculating at all - he may just be acting out of duty.

Identity economics. It goes one step beyond Behavioral Economics by arguing that identity, norms and social categories do count. However, it again confuses an economic relationship with the fact that there are monetary benefits and costs. And again defines the whole social dynamics from the individual's utility function. But, it is not always the individual maximizing or satisfying his utility what explains the individual's behavior. Identity, norms and social categories can be bounding to the point that the individual's choice is predefined. There is an unbelievable contradiction in quoting the Robbers Cave experiment and then using the Becker's tradition to include non-economic motives in the utility function; because precisely what the Robbers Cave experiment showed is that the individual's preferences do not count. The experiment would give the same result with distinct groups of individuals whatever the ex-ante differences in their individual preferences are. Arguing that individuals internalized the social norms, identities and social categories in their utility function, becomes pretty un-meaningful when such internalization can be manipulated at will in just one week with the right experiment.

Notice that the contribution of identity economics is to propose solutions which are non-economic in nature. Firms should make workers insiders, schools must instill academic values and whites and African Americans have to change their cultural setting. All of these recommendations can be made using social psychology and sociology, and they do not require to imagine an individual calculating his preferences related to economic compensations versus identity, norms or the utility associated with social categories. It is true that we require to integrate diverse social sciences or disciplines in order to understand real world phenomena like the firm, the school or social discrimination. But it is not at all evident that the best way is to do it is through including non-economic motives in the utility function. This approach has several shortcomings: 1) basis the whole social dynamics in individual decisions based upon maximizing or satisfying preferences, thus underestimates the role of institutions which incorporate in themselves such identity roles, social categories and norms; 2) one of the consequences of this individual centered approach is to imagine the individual as capable to choose himself the identity, norms and social categories that he prefers – individualism to the extreme; 3) underestimate the role of history and the enormous differences between societies as to the way they define the relationship between the individual and the society; 4) centers individual decisions on maximizing or satisfying his own preferences, and thus discards ethical decisions and others taken despite the fact that they may generate disutility even to the extreme – think in individuals' sacrifices, like the Japanese kamikazes in the second world war. It is impossible to reconcile the world of ethical principles and social duties with the individual maximization or satisfaction of utility. 5) fails to take into account that the individual interacts with the society in diverse systems which cannot be collapsed into the individual's utility function.

Risk, Uncertainty and Ambiguity. Neither risk, uncertainty or ambiguity as defined by the main tradition or by Behavioral Economics captures properly the notion of *uncertainty as to the unknown future* that dominates the thinking of both Knight and Keynes. Risk, uncertainty and ambiguity are always reduced to a probabilistic calculation whether directly (risk), through Bayesian methods (uncertainty) or by source dependent uncertainty estimated by recursive and other methods (ambiguity). In Knight and Keynes uncertainty as to the unknown future cannot be reduced to any probabilistic calculation. This fundamental distinction does not go away by saying that probabilities are psychologically biased

through all sort of mechanisms. Kahneman's distinction between system 1 and 2 becomes irrelevant for the understanding of the definition of uncertainty as to the unknown future proposed by Knight and Keynes. Even with the full usage of system 2, and with all the repetitions that one may wish so that full learning is allowed, and with experts advise and so on, the uncertainty as to the future of Knight and Keynes cannot be reduced or understood through any sort of probabilistic calculation which by definition is limited to the availability of present and past information. The uncertainty as to the future for the individual is mitigated only through the adequate Institutional Arrangement, which provides a solid belief that institutions will behave as needed to confront future events. The Institutional Arrangement allows for: individuals to establish contracts, for the proper dissemination of information and for the legal and political system that provides stability to economic transactions. Institutions cannot forecast the future either, but they can influence it in a much more significant way than the individual. Therefore, uncertainty at the individual level grows immensely when there is concern that institutions may not do what has to be done in the future. That is why conceptually, in mathematical abstract modeling, one can see multi-equilibriums due to Game Theory or Information Theory as mirrors of distinct Institutional Arrangements; and Keynes and Knight uncertainty as reflecting mainly the lack of confidence in the actual Institutional Arrangement. Uncertainty as to the unknown future in Knight or Keynes is not due to the psychological characteristics of the individual, it is a fact of the universe of existence in which live develops itself. Thus, it is the other way around: uncertainty as to the future explains why for survival reasons we have the psychological characteristics that we possess.

Rationality and Institutions. The strong version, as we saw in chapter one, was not successful to show that markets maximize social welfare, nor that there is a unique stable equilibrium. Therefore, it is a technical fact that institutions are needed to establish the economic equilibrium, and that there are many of such equilibriums corresponding to distinct Institutional Arrangements. Now What institutions to establish? and What should these institutions do? cannot be answered just rationally. If it could be done, we would be back into Plato's world, where the most intelligent should rule. But we are beyond that, we have accepted that social solutions are not just a question of reasonability - but of social preferences, that are expressed through voting in a democracy. Democracy is based on the will of the people.

Democracy is the explicit recognition that there is not a unique optimum political order that can be design rationally or through rational deliberations. Preferences are not just based upon reasons, but also upon emotions and interests – that is why we just not deliberate, we vote. And just as political preferences involve emotions, market preferences also involve emotions and that cannot be denied. However, this does not mean that only emotions count, man's preferences whether political or economic always also involved reason, we have only one brain. But, the discussion about economic rationality is not about whether emotions count or not, it is as to whether they predominate or not. For Behavioral Economists, emotions predominate in many instances and therefore individuals do not always know what is best for them, a deficiency that markets do not solve and therefore government must intervene. But what Behavioral Economics cannot answer is: How the government knows what is best for the individual? Unless we assume Plato's rationality again, there is just no way. Just like individuals vote, they have to decide what is best for them. Now, there are market failures and the individual may require more information and training – and government intervention may in some instances be required; but at the end of the day, it is not a question of properly manipulating him (through framing, availability and so on), but of letting him choose.

Rationality and Science. The world out there has an order, a synchrony that allows for the common existence of the particulars. But each particular has its own diachronic existence, defined by its own arrow of time, which goes from its beginnings to its decay and disappearance. Thus, despite the universal harmony, each particular is at risk to disappear; whether it is the earth, life itself, humanity, a given society or each one of us. Therefore, while harmonious, the world is also a chaotic and ever changing risky place for each one of the participants. In such uncertain world, belonging to a social group or a society is a surviving evolutionary feature. Since emotions are nothing else that evolutionarily learned patterns of survival responses, belonging happens both emotionally and rationally. Emotions are always key in any human interaction, analysis or decision.

Science studies the out-there and its harmonious laws and also the peculiarities of the particulars. Since the human mind understands reality through images that are emotionally selected; our understanding of the out there is also emotionally biased. But that does not mean that such understanding is not rational - we always also use reason. It is precisely due

to our extended imaginary repertoire, that the human sophisticated language (due to complex social life) allows us to create, that we can produce scientific models of the out-there. Which, therefore, despite being rational, are always imaginarily based and influenced by emotions. Science can always focus more in the harmony of existence (Newtonian physics or General relativity) or in the existence of given particulars (Darwin's evolutionary theory); but, in both cases uses rational models which happen to be both rationally and emotionally influenced.

At one extreme, the strong rational man behaves like a scientist, despite the emotional influences, he gets a sophisticated rational explanation of his preferences; and to arrive to such explanation, he uses the support of many other market participants, whether they are individuals or organizations. In the other extreme, the weak rational man of Behavioral Economics, heavily influenced by his emotions - system 1, cannot identify well his preferences in many economic realms. The soft rational man of Smith is somewhere between these two extremes.

The point however, that we want to stress here is: that the strong rational economic man, the *humans* of Behavioral Economics and the soft rational economic man are in themselves scientific abstractions of reality. Each one of them, imaginarily overemphasize different aspects of economic life; and therefore, are useful to explain distinct economic problems. And none of them is a true representation of our human evolutionary self; because science can never get to know the true reality, it is always restricted only to know rational images of reality - emotionally biased. Even oppose or quite distinct visions of reality may explain the out-there reasonably well. Newtonian physics notion of time is quite distinct than Einstein's and yet both work well for 95% percent of the macro-physical phenomena. We will argue that beyond its differences, and the limitations of each view of the economic man, all three of the visions mentioned above result useful for particular economic problems.

There is no doubt that the psychological characteristics of human beings do play a role in economic decisions and in some cases they are key to understand some specific economic problems; such as organ donations, individual savings decisions and impulse buying. However, we wish to point out that the main problems in economic theory cannot be answered through Behavioral Economics. Two examples will do for our argument. First, in real life there are large markets, and products are transacted at certain prices consequence of demand and supply. Now, in order to reproduce mathematically the real market phenomena of alloca-

tion of resources and determination of prices, the abstraction of a strong rational economic man made by contemporary Neoclassical Economics works reasonably well. But, if we take into account Prospect Theory and all the psychological effects found by Kahneman and others, the equations become unmanageable and we cannot any longer emulate the real phenomena of price determination and allocation of resources in large markets. Second, Smith introduced his economic man to explain economic growth. Growth for him is the consequence of technological development stimulated by the enlargement of the markets due to the allowance of more economic individual freedom. Neither the weak rational man of system 1, nor the cooperative altruist *human* of Behavioral Economics, can help us to explain economic growth in the Smith's sense⁸⁸.

TOO MANY CHOICES?

In 2004 Barry Schwartz wrote *The Paradox of Choice* in which he questions the common belief that more choice implies more freedom and therefore more well being. He mentions that it has been shown by Sheena Iyengar that “for every ten additional mutual funds offered by the employer, the rate of participation went down 2%”⁸⁹. He argues that we will be better off by: 1) embracing voluntary constraints in our freedom of choice; 2) not seeking the best but just what is good enough; 3) lowering our expectations about the results of decisions; 4) adopting nonreversible decisions; 5) paying less attention to what others around us are doing.

Too many choices, he argues, may be demotivating, for example: “Thirty percent of people exposed to the small array of jams actually bought a jar, only 3 percent of those exposed to the large array of jams did so”⁹⁰. Electric, telephone, health and pension plans decisions overload the customer.

⁸⁸ For understanding the whole universe, whether it is the material universe or the economic universe, simple elegant mathematical theories like Newton's Gravitational Force, Einstein's General Relativity and the Neoclassical Price Theory seem to work better. However, because their simplicity and generality these theories are not good explanations of the micro-cosmos. In physics, the micro-cosmos is explained by Quantum Physics. In business, Organizational Behavior and Marketing always found the neoclassical theory of the firm insufficient to explain the relevant microeconomic problems that they were facing; so they have to develop their own explanations.

⁸⁹ p. xiv

⁹⁰ P. 20.

The consequence is: that most customers do not make electric or telephone choices, they just stick with what they have; bad decisions about prescription drug plans, hurt senior citizens; and investment decision are split in similar percentages among the investment options, offered by the employer. We have many choices open to us. From how do we look, due to modern plastic surgery, to where and for whom do we work, many people today work at home through the internet. We chose how to love, how to pray and even who to be. We are overload, and it produces dissatisfaction.

We do not always know what we want. Memory relates mostly to peak and end moments of an experience and it does not describe it well (Kahneman's results); thus, often there is a discrepancy between memory and accurate descriptions of what we actually felt. And as a consequence, there is also discrepancy between predictions and accurate descriptions of the real feelings that we end up having. Therefore, it is difficult to set proper future goals.

Moreover, available information is psychologically distorted (again Kahneman's results); people overestimate dramatic causes of death versus mundane causes. Fortunately, group predictions are better than individual ones, because they put together many individuals' memories. People make mistakes also due to anchoring, frames and accounts, the endowment effect and the sunk costs. He refers to Prospect Theory.

He argues that the time, money and anguish involved in getting information and taking into account all of the options is so huge than "maximizers" do worse than "satisfiers". Creating a Maximization Scale to classify people either as maximizers or satisfiers, Schwartz show that maximizers, measured by other psychological scales already proven, "experienced less satisfaction with life, were less happy, were less optimistic and were more depressed"⁹¹. Using a regret scale, it can also be shown that maximizers are much more susceptible to all forms of regret, especially post-decision regret, also known as *buyer's remorse*. Maximizers are concerned with social status.

He introduces a scale to measure perfectionists and he found that they are correlated with maximizers, but they are not the same. Perfectionists have also high standards, but they do not expect to meet them like maximizers. Perfectionists are not depressed, regretful or unhappy.

Schwartz reminds us of *learned helplessness*, discovered by Seligman (1967,1975), rats that could not escape a series of shocks by any response, become unable to learn future tasks. Too many choices, that we cannot process, do not mean more control, they mean less. We know that there

⁹¹ p. 88

is a relation between connecting socially and being happy; but social ties actually decrease freedom, choice and autonomy. We have moved from a social fabric of birthright to one based in a series of deliberate demanding choices that increase loneliness. He quotes Robert Lane “too many life choices...demands to discover or create an identity rather than to accept a given identity”⁹². He mentions that Lane (2000) has shown that serious clinical depression more than tripled in the last three generations in the United States and David Myers (2000) that between 1960 and 2000 the divorce rate doubled, the teen suicide rate tripled, crime rate quadrupled, prison population quintupled, babies of unmarried parents sextupled, and cohabitation without marriage increased sevenfold.

A society that has chosen individual freedom has paid a price. It has reduced social constraints, but such freedom sometimes affords a kind of enslavement. Therefore, “people would be wise to seek out some measure of appropriate constraint”⁹³. In order to ease the burden that freedom of choice imposes we should make decisions about when to make decisions – what Sunstein and Ullmann-Margalit have called second-order decisions; example: *always buckle up or never cheat on your partner*. Using rules, presumptions, standards and routines we reduce the decisions to make. Survival requires biological and cultural constraints. “The need to choose in ever more aspects of our lives causes us more distress that we realize”⁹⁴.

Choices trade-offs have psychological consequences, which reduce the satisfaction of the final choice made. Being forced to confront trade-offs makes people unhappy and indecisive. As the following examples show: 1) researches found that, related to CD players, 66% buy when confronted with an interesting alternative; however, when confronted with two interesting alternatives only 54% buy one of them, because the second alternative creates a trade-off and cause indecisiveness; 2) doctors in relation to patients with osteoarthritis faced the option of a new medication or recommending to go to an specialist, only 25% recommended the specialist; but when faced with two new medications 50% did.

Complex decisions with too many options have a high emotional cost that creates a negative mood, that impairs adequate thinking and decision making. With fewer options there will be less self-doubt. Distinguishing bad from good is an evolutionary positive trait, but it is quite different

⁹² p. 114

⁹³ p. 117

⁹⁴ p. 120

from distinguishing good from better. Learning to choose in a world of unlimited possibilities is “perhaps too hard”⁹⁵.

A study showed that those who had the option to change their minds were less satisfied with their choice than the ones that could not change their mind. The pain of making trade-offs is particularly acute for maximizers and is dramatically attenuated for satisfiers.

When an alternative could of have turn out better there is post-decision regret or buyer’s remorse. – Anticipated regret will make decisions harder to make, and post-decision regret will make them harder to enjoy”⁹⁶. In the short run we regret bad choices, in the long run we regret failure to act - those things on which we did not decide. Regret is particularly powerful, because it is not restricted to objective reality – it relates to our imagination. Since regret implies responsibility “we often choose the option that minimizes the chances that we will experience regret”⁹⁷. Sunk cost effects are larger when a person feels responsible of the initial decision. –Many people stays in very troubled relationships because of all of the time and effort they’ve already put into it–⁹⁸. The availability of choice exacerbates the two factors affecting regret: 1) personal responsibility and 2) imagination of a counterfactual better alternative. And more regret implies less satisfaction with the choice you already made.

Adaptation means either that we get used to things and then we start to take them for granted or the result of a change in reference point owing to a new experience. Real world differences become smaller because psychological adaptation. Lottery winners were found to be as happy as normal people, and paraplegic and quadriplegic people while less happy than normal people - but still judge themselves as happy people. The pursue of hedonic pleasure gets to disappointment. Brickman and Campbell call this phenomenon the *hedonic treadmill* – no matter how fast you run looking for hedonic pleasure you do not get anywhere. Moreover, you also adapt to subjective feelings, what Kahneman calls the *satisfaction treadmill*. Maximizers making big investments in any decision, will most likely be disappointed, because due to adaptation: the pleasure obtained from the decision vanishes quickly enough that will not be sufficient to pay the large costs incurred in taking the decision.

⁹⁵ p. 148

⁹⁶ P. 152

⁹⁷ p. 161

⁹⁸ p. 166

Prospect theory argues that all evaluations are relative to a baseline but How do we set the baseline? Michalos (1986), have argued that we due it trough establishing three gaps to evaluate perceived experience: 1) between what one has and wants; 2) between what one has and what one thinks others like us have; 3) between what one has and the best one has had in the past. Schwartz adds a fourth gap, 4) between what one has and what one expects. The amount of choice and control we have in contemporary societies has risen expectations. Real income has increased a lot but satisfaction has not. Longevity has increased significantly but there is unparalleled anxiety about health. Status has become as important as never before. Unhappy people ruminate more about social comparisons, which trap them in a downward psychological spiral. Maximizers report to be more concerned with social comparison. There has been a dramatic increase in societal unhappiness, depression in the year 2000 was ten times as likely as in 1900.

“The revised theory of helplessness and depression argued that helplessness induced by failure or lack of control leads to depression”⁹⁹. Modern culture encourages the individual to blame himself for failures, and this promotes the increase in depression and suicide rates that we had been seen. Today’s culture neutralizes the best vaccine against depression. “deep commitment and belonging to social groups and institutions...”¹⁰⁰. In *Bowling Alone*, Putnam (2000) focused on the deterioration of social connection in contemporary life. “Unattainable expectations, plus a tendency to take intense personal responsibility for failure, make a lethal combination”¹⁰¹. Schwartz found a strong positive correlation between maximizing and measures of depression. Eckersley (2002) Eckersley and Dear (2002) point out that nations who value more individual freedom do have individuals that prosper to an extraordinary degree, but they also tend to have the highest suicide rates.

What to do about choice? Schwartz recommends the following steps at the individual level: 1) Choose when to choose; 2) Be a chooser not a picker; 3) Satisfice more and maximize less; 4) Think about the costs of missed opportunities; 5) Make your decisions non-reversible; 6) Practice an “Attitude of gratitude”; 7) Regret less; 8) Anticipate adaptation; 9) Control expectations; 10) Curtail social comparison; 11) Learn to embrace constrains.

⁹⁹ p. 211

¹⁰⁰ p. 216

¹⁰¹ p. 218.

Comment

The Paradox of Choice establishes successfully that there are psychological dimensions related to the choices we make. These psychological dimensions are associated with societal pressures from the culture that we belong, and with individual differences as to how we approach choice. He argues that contemporary society has increased individual choices too much, and that the individual, which has become responsible of himself, is overload by choices. He ends the book recommending the individual what to do to reduce such overload. Despite the richness of the argument, as we will argue below, it fails to make its case against the excess abundance of choices.

Schwartz arguments about why more choices are really less satisfactory is not convincing. Choices do have an economic value. Options are not only bought daily in the large financial markets, they are also embedded in many product offerings that customers buy all the time. People is willing to pay to have more choices. If we one looks carefully at some of the experiments he quotes, the conclusions he reaches are not really due to the increase in choices, but to the absence of information and knowledge to compare them properly. The rate of participation of employees goes down when mutual funds are significantly increased by the employer *because it is awfully difficult to compare between them*. Real choices are those which can be understood and analyze. The answer to the paradox found in this example is to increase information, education and knowledge; but, it is not to reduce the number of options. The example of the doctors is again badly interpreted. The doctors, referred to, are not specialists, and if there is only one new medication, a reasonable assumption is that this medication is what the specialist would give to the customer anyway, that is why in this case they send less people to the specialist. With two new medications, their uncertainty increase as to what to do, it shows to them more clearly the limits of their knowledge; that is why they send more people to the specialist. He confuses again the burden of choices with the lack of knowledge. There is in several instances lacking information and not enough knowledge as to the alternatives that the customer face; and yes, he is overload with alternatives that he does not fully understand. But, he is still better off that what he would have been had he not had the alternatives.

Those countries in which the supply of cars, or other goods, is restricted because imports are regulated, have customers that wish they could have more options - like the customers in USA do. Latin American people enjoy going shopping in USA, because there are more options.

He refers to the telephone bill and says customers just stick with whatever they have, this again does not explain reality well. In México, for many years there was only one provider of cellular phone lines, as a consequence customers overpaid substantially for this service, until new regulations brought new choices, to which customers rapidly moved forcing the initial monopoly provider to reduce drastically its prices. Options have a positive value for the customer that should not be undermine.

In particular, Schwartz underestimates and misunderstand the consequences of the new technological revolution, so called TIC, in information processing (the I), communication (the C) and working place technology (the T); which allows very large sets of choices to be process, analyzed and understood. There is a growing industry that facilitates access to information and the understanding of it, either through the web or to specialize companies that produce consumer reports. In fact, the largest companies in the stock market in the USA today have grown their business by increasing customer's choices. Amazon started by increasing the supply of books to which the customer had access; and had then do it for almost any good. Uber created a new choice for urban transportation. Airbnb created a new accommodation choice while traveling. In all the cases, customers responded to the increase of choices by buying a lot more and sending the stock price of these companies to the roof. The name of the game in the new TIC world is to increase customer's choices and to make them manageable.

Another argument Schwartz uses to be critical of too many choices is, that when they are too abundant they produce helplessness, individual depression and higher suicide rates. The idea that suicide can be the consequence of individual isolation is a very old sociological proposal due initially to Durkheim. Schwartz has a good point linking extreme depression and suicide. He mentions that the revised theory of helplessness and depression argued that helplessness induced by failure or lack of control leads to depression. Contemporary western societies do make individual responsible of their own well being and therefore the connection is there with failure and loneliness, I have written elsewhere about this phenomenon. But, this individual isolation is not related as Schwartz argues to the increased number of choices. Suicide rates in countries that provide few choices can be much higher than in countries that provide more choices, the suicide rate in Sri Lanka is 34.6, in Guyana 30.6 and it is only 12.6 in USA and 7.4 in the UK¹⁰². Therefore, more choices do not increase

¹⁰² Data per 100 k population, taken from World Health Organization, last updated 2017 04 04 available in apps.who.int.

the suicide rate. Suicide rates are related to individual isolation and sense of helplessness, but not to the number of choices offered by the society. Strong traditional cultures maintain traditional ties between the individual and the society and have in general low suicide rates, like México 5, Brazil 6, Iraq 4.1 or Philippines 3.4. It is interesting to contrast the rate of suicide between India which was conquered many times and has many cultures, 16, and Bangladesh, 6, or Afghanistan, 7, more influenced by the Islam. There are diverse reasons for a high suicide rate, Japan for example does have a traditional society and has a 15.4 suicide rate; this is due to the fact that in this culture the individual who fails in the task indicated by the group is isolated by shame. Suicide is a complex social phenomenon, that has to be explained by many social factors; we need to understand the specific institutional history of a given society, to be able to appreciate whether the individual is isolated or not as compared to other societies. What is relevant for our purposes in here is, that more choices cannot be associated with more individual depression and higher suicide rates; therefore, discussing the number of available choices to the individual to explain suicide rates is not the right way to go.

Because of the previous arguments, we can conclude that Schwartz's case *against too many choices is not successful*. There is however, one more contribution of this author, that we should discuss, and that is his distinction between maximizers and satisfiers. He shows that given the conditions of a real world, characterized by Simon's bounded rationality and by Kahneman's human fallibility, it is better to have the attitude of a satisfier rather than a maximizer. Simon has shown previously, convincingly that the attitude of satisfier is superior from an adaptive perspective. Schwartz shows that maximizers experienced less satisfaction with life, were less happy, were less optimistic, were more depressed, were more susceptible to all forms of regret, were more concerned with social status and spent more money and anguish in getting information and taking into account all of the options. This is a relevant finding, but it is a psychological result. Which is largely unrelated to the discussion as to whether, and for which economic problems, the abstraction of an *econ* is useful or not; and which are its limitations. *Econs* are not necessarily individuals with attitude of maximizers. *Econs*, in a soft version, like Smith's, are not an indication of the right psychological attitude to have; *econs* are the consequence of a social institution – of a society that institutes individual economic freedom – a society that allows individuals to act selfishly in a particular social arena – the economic markets. And in a strong version

econs are a scientific abstraction trying to explain how markets and prices behave. *Econs* in this strong version are congruent individuals with rational foresight acting in the economic markets. In the strong version *econs* do maximize, but it is a theoretical scientific abstraction of the way economic markets operate – it never pretended to be a description of the best psychological attitude to have in real life in many social issues. Therefore, while the empirical results comparing maximizers and satisfiers do have psychological relevance, and they are important for a discussion about appropriate individual psychological attitudes; they are not relevant in the discussion of whether the abstraction of a *human* is better or not than the abstraction of an *econ* to understand particular economic problems.

Schwartz's writings make evident the need for an integrated view of social sciences, in order to be able to put each result to where it belongs, and not to confuse the discussion. We will be doing so in chapter four. It is however fair to mention here that the confusion between the abstraction of the *econ* in its strong version and the discussion of *human's* best psychological attitudes in social issues is partially due to the insistence of some Chicago economists – like Becker - to generalize the economic man's utility function to include non-economic motives. Because, by doing so, Becker exported the maximizing attitude of the strong rational man, that was an abstraction of man behavior in large markets, to other aspects of social life. Samuelson, however, the creator of the abstraction was not even a believer in pure free markets; he was a Keynesian, who understood well that markets do need regulation and government intervention.

PREDICTABLY IRRATIONAL?

We make repeated mistakes – without learning much. We do not diet, we buy things we do not need, after a one-cent aspirin we continue to have a headache but after a 50-cent aspirin the headache is gone, after been asked to recall the Ten Commandments we tend to be immediately afterward more honest. Our common held believe, Ariely argues, that that we are rational – that is capable to make the right decisions for ourselves, is inadequate. Ariely writes his book *Predictably Irrational* to explain human predictable irrationality – our distance from perfection.

He argues that we do not know what we want – our preferences are related to contextual comparisons, example: MIT Sloan student's choices

in relation to an annual subscription to the *Economist* were as follows: Context one - three options: 1) Internet-only subscription for \$59, 2) Print-only subscription for \$125, 3) Both internet and print subscriptions for \$125. Students' choices: 1) 16%, 2) 0%, 3) 84%. Context two - only two options 1) and 3); the decoy option 2) is eliminated. Students' choices were as follows: 1) 68%, 3) 32%. Unbelievable as it seems, the decoy presence changes drastically the results. Context dependence explains why. As Kahneman and Tversky have shown, people is willing to take a 15 minutes trip to save \$7 in a \$25 pen, but are unwilling to take the same trip to save the same \$7 in a \$ 455 suit. Context dependence also explains why the more we have the more we want.

Ariely discusses, how our initial decisions or the first price that we encounter become an anchor base. Choices are not the consequence of our fundamental likes or dislikes; supply and demand are not independent. Due to anchors' influence, choices "are not necessarily going to be an accurate reflection of the real pleasure or utility we derive from those products"¹⁰³. We truly follow our gut feelings and rationalize them afterwards. An anchor that is powerful is giving something for free, example: people prefers a \$10 Amazon free certificate than to buy a \$20 certificate for \$7. People go to museums the day it is free even though they know it is a mistake, because they will be awfully crowded.

This author points out that, we live in two worlds: one with social norms and one with market rules and we keep them separated. Good sex belongs to the first, prostitution to the second. People is willing to do social work for free, work that they are not willing to do for a payment. It has been shown in studies, that for a given task, any payment that do not meet market standards will unmotivated people; people that could be well motivated to do the same task free for social reasons. Market norms relate to a broad range of behaviors including self-reliance and individualism. He reminds us of the study in which the parents who came late to pick up their child's from a care center were impose a fine to encourage them no to do it, and the result was just the opposite - the fine was interpreted by the parents as a market payment, therefore they were free to pick up their child late. Once the care center realized that the implication of the fine was the opposite of the desire one, it removed the fine. But to their surprise, the fathers continue coming late; imposing the fine removed the social norm that restraint the parents from coming late, and removing it did not bring back the social norm. Which show that "social

¹⁰³ p. 50

relationships are not easy to reestablish”¹⁰⁴.

Social norms, he says, are important even in the business world, between firms and customers and employers and employees. In education, related to teachers, he argues that standardized testing and performance based salaries “are likely to push education from social norms to market norms”, it might be better to “instill in all of us a sense of purpose, mission and pride in education”¹⁰⁵. As for the love of learning – you can’t buy it; and if you try, you might chase it away.¹⁰⁶ Social norms to motivate people are cheaper, and many times more effective. Money is needed but in some aspects of life it is not useful. Monetary gifts are more efficient, yet most people will rather have a nonmonetary gift.

In the markets – in economic exchanges – however, “we are perfectly selfish and unfair. And we think that following our wallets is the right thing to do”¹⁰⁷. “we are caring loving animals, but when the rules of the game involve money this tendency is mute”. Students offered free candy take three each one, but if it is price at 1 cent they take 11 – they do not think in social norms anymore. In fact, at positive prices the amount of candy taken was inversely related to the price, which means that at positive prices an economic relationship is established. But the increase of the price from zero to 1 cent was contrary to demand theory, it increased the demand because we move away from restraining social norms to free market behavior. A good practical consequence of these ideas is anti-pollution policy, which when based only in price incentives may not be enough and can be aid by for example public posting of the pollutants emitted by each emitter.

He mentions that in a study of sexual aroused students “Prevention, protection, conservatism and morality disappeared completely from the radar screen. They were simply unable to predict the degree to which passion would change them.¹⁰⁸” Everything changes to a dark self, in Freudian terms the *id*. We need to strengthen our self control and he suggest positive reinforcement – In order to overcome many types of human fallibility, I believe it’s useful to look for tricks that match immediate, powerful, and positive reinforcement with the not-so-pleasant steps

¹⁰⁴ p. 85

¹⁰⁵ p. 93

¹⁰⁶ p. 93

¹⁰⁷ p. 107

¹⁰⁸ p. 127

we have to take toward our long term objectives.–¹⁰⁹ This he thinks is particularly important for preventive good health measures.

He explains the endowment effect, – ownership of something increases its value in the owner's eyes–¹¹⁰. In general, we are overoptimistic about anything that has to do with ourselves, that is why it is useful to listen carefully the advice and feedback from others.

In an experiment Ariely showed that MIT students were irrational about keeping alternatives open, and that they failed to maximize returns in a computer game which required to stay in a giving rewarding room versus jumping from room to room to try out all of the potential rewards in each room. The trick of the game was that unvisited rooms disappeared and could not longer be visited. Even students repeating the game failed at the task. From this game he concludes that, we must learn to intentional close some options; which may also help us in recognizing important ones, that we want to leave open.

In another experiment he showed how previously held impressions can cloud our point of view. People's expectations influence their view of subsequent events. A so-called MIT beer was preferred to a Budweiser beer, but the so-called MIT beer was just Budweiser plus two drops of balsamic vinegar for each ounce of beer. If people was told before hand the content of the MIT beer they did not like it afterwards – knowledge of its content change their expectations. However, if they were told about its content after they had drink it and choose it, they continue preferring it. A coke drink stimulates the hedonistic parts of the brain, but if they were told before hand that it was a Coke or a Pepsi the frontal area of the brain – related to cognition and ideas - is also stimulated; and more with the Coke than with the Pepsi. Expectation change stereotypes, which affect the behavior of people. In an experiment one of the best violinists in the world played in a Metro station and people could not distinguish the difference, they did not stop or give him more money. “Positive expectations allow us to enjoy things more and improve our perception of the world around us.¹¹¹”

In another study, Ariely and others, found that almost all participants experienced less pain from electric shocks under the influence of Veladone, a placebo that was really jus vitamin c, at a Veladone price of \$2.50;

¹⁰⁹ p. 165

¹¹⁰ p. 170

¹¹¹ p. 223

and when the price was dropped to 10 cents only half of them did. Similar effects were found with energy drinks.

People tend to mistrust marketers, in an experiment in a commercial plaza where people were offered \$50 for free with no commitment attached only 19% stop to pick up the \$50; mistrust was so high that 81% choose not to take the money, because they did not believe that there was no trick. For a stereo, positively described by consumer reports, participants were willing to pay \$407; and only \$282, if the same positive description was done by a Cambridge Audio brochure. Trust is a very important tangible asset.

When given the opportunity to cheat, even for just 10 cents per each question answered correctly, Harvard MBA students did cheat, but in a moderate way. And even with zero chance of getting caught, they still cheat only in a moderate way. Ariely argues that “our internal honesty monitor is active only when we contemplate big transgressions...”¹¹². Surprisingly enough, in another similar experiment in UCLA and MIT it was enough to ask students to read the Ten Commandments or to sign a code of honor before the experiment for them not to cheat – the reading, or the signing, activated the internal honesty motor. In a series of experiments, Ariely shows that people are more willing to cheat when nonmonetary objects are involved, they will steal a coke – but not the equivalent cash. They however will cheat with tokens exchangeable for money.

In a conformity study, Ariely and others have shown, that when people order beer or food out loud in public in a restaurant, they are influenced by what others have ordered before them. But, there are cultural differences. In USA they made an effort to order something different from what others have ordered, in Hong Kong they order something similar. In both cases, however, the orders out loud in public were different from what they would order privately if asked to write their order. And in both cases, people were ex post less satisfied with the orders provided in public out loud; which shows that people are willing to pay a price to conform.

We do not know reality, but only our representations of it, based in our limited cognitive tools. That is why emotions, relativity, social norms and so on, influence our behavior. Ariely concludes that “our irrational behaviors are neither random nor senseless – they are systematic and predictable”¹¹³; and that economics would be better off by taking into account how people behave in instead of how should they behave – this is for him the basis of Behavioral Economics. He insists that the predictable

¹¹² p. 279

¹¹³ p. 317

mistakes are not due to lack of knowledge, lack of practice or being weak-minded; experts as well as novices are affected in a predictably way. We have to be vigilant to understand where and when we make erroneous decisions - technology can help. Businesses and policy makers, he argues, should design their policies and products to help us achieving better results.

Comment

Irrationality, as presented and defended by Ariely, does not necessarily mean that markets do not provide a rational solution. Take for example the subscription to the economist, for his experiment we know that the decoy induces more people to buy the full subscription; but this is not the end of the story, people will use the Economist's subscription for one year, and then will decide whether there is value or not in it and revalue its initial decision. Moreover, in the real world almost nobody will subscribe to the Economist unless it is already a frequent reader, and that means that he already has a well formed idea of what he needs and wants. The previous or ex-post experience with the product do changes choices, and make them more rational. Anchors, emotional arousal, previous expectations, ownership and so on do influence our decisions. But markets through information, experts, institutions and real market forces change our irrational decisions. Repetitive experiences with a product do relate demand to product quality; expert information and advice brings more objectivity to our decisions; friends previous experiences, web commentaries and open information and so on provide ways of contrasting potential decisions; complex decisions involving many products and choices are made easy by all sort of software programs, that allow relevant comparisons, provided in the web free or for a charge. Some of the examples presented by Ariely involve more rationality than he acknowledges. For example, choosing a free \$10 dollar amazon certificate over a \$20 dollar certificate with a \$7 price has the following rationality. We are clearly better off with the \$10 certificate than we are today. But that is not necessarily the case with the \$20 certificate in which \$7 have to be paid. Once we pay \$7 dollars for the \$ 20 certificate, the questions have to be raised Do I really need the certificate? Do I want to search something now to buy in Amazon? If the answers are negative, I may end up worse than I am today.

We are social animals, and our survival requires that we pay attention to the group and that we follow the group. Therefore, yes we are influence by the group. Also we are endowed with an optimistic survival bias, that

produces relaxing chemicals by doing exercise and/or interacting with loved ones. If we fool participants with a placebo, we put to function a fundamental social trait. Which does not mean that we do not appreciate reality, it just means that we are made to appreciate it collectively. Individual rationality cannot be detached from social existence; reality is a psychological dimension that can be influence socially. But there are of course limits. We know that people with cancer having dogs leave two more years in average, but that does not mean that we can cure cancer just by increasing sociability. Evidence from the out-there is in fact read through our perceptions influenced by our social value system and our expectations, but knowledge changes when our beliefs do not correspond to cues from the out-there. Copernicus's findings were socially opposed, until facts could not be denied any longer, and we had to change our social perception of reality. Survival imposes a social reading of reality, but has to be enough objective to serve surviving goals.

In fact, one of the most interesting features of modern societies is that they have made significant more flexible the social learning that comes from individuals accumulated facts or knowledge. Individual freedom means that many more people is thinking and analyzing reality – which does not eliminate social influences, but makes the process of individual - social interaction more fluid and objective. Yes, placebos do work, but they do not cure serious health problems. There are rational limits to irrationality. Take the example of the violinist, it is true that nobody distinguished him in the metro scene, it is also true that not very good violinists may survive in the professional world; but what is also true is that the best violinist in the world is pretty damn good, and that many experts can distinguish the differences – there are real rational differences between diverse violinist's abilities.

Ariely is right, economic relations are not the only relation between the individual and the society; in fact, we had been arguing that, there are two more, via the Integrative and the Power System. The same individual action can be performed at no charge for social reasons or at a very high charge in a market context. One of the confusions caused by few extreme radical participants of the so called Chicago school was that utilitarian calculations can explain well non market behavior. As we discuss before, this proposal has to be technically rejected. Altruistic behavior by utilitarian calculations, giving exchange markets, is mathematically so unlikely that it cannot explain reality¹¹⁴. There are different relations

¹¹⁴ Remember the condition: in a world of n goods, for Agent A to behave altruistic in a good "1" towards Agent B is: that Agent B does not have more than the minimum, that agent A considers indispensable, in the other $n-1$ goods.

between the individual and the society that must be taken into account, a fact that has been amply recognized by classical economists and by institutional economists. One of the key roles of institutions is to further develop the natural individual instinct of belonging. Belonging, as we will see in chapter four, is what prevent selfish socially destructive individual behavior.

Ariely's is an interesting book because it pushes Behavioral Economics all the way to arguing that we are predictable irrational Are we really? Because if we assume with him that we are irrational - that is non capable to make the right decisions for ourselves, the whole philosophical and political system on which the Western world is built collapses What is the meaning of democracy if individuals cannot make rational choices? and How do markets work in a world of irrational individuals? I know that professor Ariely and others in Behavioral Economics do not want to take us that far, but whether they want to or not the questions are opened. Predictably irrational nor only says that we are irrational, but that we can be manipulated Can we? And if so What is the meaning of individual responsibility? so crucial to the whole legal system of contemporary societies. Behavioral economists make a good case against the strong rational economic man and do show many instances in which such abstraction do not operate well, but that does not mean that the abstraction of an irrational human being operates better. We are left with the need to answer many questions: Where and how do rationality and irrationality meet? Who are we? What implications do a more integral vision of man have for economics? We really cannot read Ariely's book without feeling an urgent need for a broader framework. One capable to put together the findings of behavioral and traditional economics with the way markets, democracy and law operate in the real world of the contemporary societies. This is the purpose of chapter four; therefore, in here we will only make few remarks in this direction.

Democracy and Capitalism were born together; democracy provides the social legal frame on which Capitalism operates. But democracy also requires the capacity of the individual to take decisions, again with whatever degree of rationality they may have. A society, like the contemporary ones, based upon individual decisions can hardly be understood and explain with the idea of an irrational predictable man. However, it is true that the scientific evidence is there that in some cases we are irrational and even predictably irrational. Therefore, we need to put all this together, and for that we need a broader framework that must start

with answering: Who are we in evolutionary terms? Who are we psychologically (which as we will see goes well beyond cognitive-behavioral and social psychology)? How does reason and emotions interact? How do we make decisions? In which cases we can be manipulated and in which we cannot? How do groups develop? How are institutions created? How do individuals and groups, or institutions, interact? How did individual freedom start? And so on. It is only in the context of this broad framework, that *we can judge the virtues* of the soft version of the rational economic man, the strong version of the rational economic man and of the *human* man of Behavioral Economics *to indicate solutions for economic and social problems*. As we mentioned, to discuss this broader framework is the task in chapter four, but before we do that, we will review the Nudge, Behavioral Macroeconomics and Behavioral Finance in the next chapter.

THE NUDGE, BEHAVIORAL MACROECONOMICS AND BEHAVIORAL FINANCE

THE NUDGE

In 2015 Thaler wrote *Misbehaving*, he starts by referring to the endowment effect – people value more what they have, then he describes Kahneman's Prospect Theory and the fact that preferences reversals are found in the laboratory i.e. people prefers a to b, but if they were to own a and b they sell b at a higher price (see example, previous chapter). He argues that people do not always have the possibility of repeated transactions that allow frequent practice and immediate feedback, and therefore there are many economic transactions that do not allow for learning. Moreover, he says many of the so called experts that suppose to help the customers have conflict of interests. He explains again: mental accounting, the inconsistent customer behavior in bargains, sunk costs that cause irrational usage and how people keeps money in buckets designed for specific purposes.

Thaler shows, what he calls *the house effect* and the break even effect, both based upon Prospect Theory. People usually do not want to participate in a 50 – 50 gambling in which they can earn the same amount that they can loose. However, if people are told that they just won \$30, 70% of them accept a 50-50 gamble to earn or loose \$9. This, he calls the house effect, when people has won they are willing to gamble – which, together with the tendency to extrapolate recent returns into the future, goes a long way to explain, in his opinion, financial bubbles. When people are told that they just lost \$30 only 40% participate in a 50-50 gambling to earn or loose \$9; but 60% participates in a 33% chance to gain \$30 and 67% chance to earn nothing versus a sure \$10. The increase from 40% to 60% shows *the break even effect*, if there is a chance to break even people is more eager to participate.

People fairness judgments are related to the endowment effect. A company making small profits in a recession: 1) with no inflation, decreases wages and salaries by 7% and it is considered unfair, but 2) if there is 12% inflation, and salaries are increased only 5%, it is considered fair. In fairness games people do not behave accordingly to economic theory. As an example, remember the ultimatum game explained in last chapter.

Thaler mentions, that Fehr and Lorenz (2007) have shown in the laboratory, that firms that elect paying higher wages than the minimum were compensated by even higher efforts from their employees, and that Rabin (1993) has explained theoretically why people can be altruistic in the dictator game and punishing in the ultimatum game the non cooperative behavior – the explanation is that we behave conditional upon others behavior.

Finally, in his 2015 book, Thaler refers to Nudges. *The Nudge*, was first published in 2008, and in it, Thaler and Sunstein argue that “The false assumption is that almost all people, almost all of the time, make choices that are in their best interest or at the very least are better than the choices that would be made by someone else”¹¹⁵. There is human fallibility in decision making due to: anchoring, availability, representativeness, optimism and overconfidence, loss aversion, status quo bias, and framing. So that – The first misconception is that it is possible to avoid influencing people’s choices¹¹⁶. They argue that “Choice architects can make major improvements in the lives of others by designing user-friendly environments”¹¹⁷. The answer for them is the Nudge.

Thaler and Sunstein describe, how people try to impose self control in their myopic doer self by using their far-sighted planner self, but “doers are often difficult to rein in”.¹¹⁸ People uses devices for self control such as alarm clocks, Christmas Clubs for saving and mental accounting i.e. treating their money in diverse pots as not fungible.

Most people learn from others, social influences come through information and peer pressure, humans are Nudged by other humans because we like to conform. In the 1950s Asch¹¹⁹ show that people is influenced by others even in simple tasks like guessing the length of a visual line, and

¹¹⁵ P. 9

¹¹⁶ p. 10

¹¹⁷ p. 11

¹¹⁸ p. 44

¹¹⁹ See Asch 1995

recently brain imaging has shown that people actually see the situation as everyone else do¹²⁰. Conformity effects have already been shown since the 30s by Sherif¹²¹. Sherif showed that a confederate, designated by him (his own Nudge) and unknown to the others, could severely influence the group thinking and that the new way of thinking was then internalized by the others. Thaler and Sunstein argue, that investors also follow the herd, they buy when others buy - they quote Shiller. The intervention that had increased more tax compliance was telling tax payers that 90% of tax payers had already comply. An advertising informing that most 70% of Montana teens are tobacco free had as a consequence a significant statistically decrease in smoking.

In addition to information and peer pressure, people can be influenced through priming. Priming is directed to the automatic system of the brain. People can be “prime” - i.e. directed - into certain behaviors by offering apparently irrelevant cues. For example: “Those given ice coffee are more likely to see other people as more selfish, less sociable, and, well, colder than those who are given hot coffee”¹²². or asking people whether they intend buy a new car increased purchase rates by 35% - this Nudge can be accentuated by asking them when and how they plan to do it.

Thaler and Sunstein argue, that people need Nudges “ for decisions that are difficult and rare, for which they do no get prompt feedback, and when they have trouble translating aspects of the situation into terms that

¹²⁰ This is an interesting example. The conformity explanation is that due to the fact that others are emotionally important for us our capacity to reason is distorted by their influence and we end up seeing the length of the line as they say they do - which is actually an intentional deviation from reality. But, there is an alternative explanation from an evolutionary point of view. The fact is that people is not sure of the length of the visual line, and it is a superior evolutionary survival quality that under this circumstances we are influence by others. It is important to remember than in the ego Sherif's experiments, the influence of others is directly linked to how undefined is the objective external reality. No body can influence others that an angry lion is not really angry. But when the external reality is not clearly defined, to be influence by others is a survival feature that allow us to have collective views which are evolutionarily superior. In the Asch experiment, people are fooled, because the others intentionally lie as to the length of the line that they are seeing, but that does not suppose to happen in the real world. Others, in general, do not lie, and their perception is always helpful to create together a better view of the out-there. Therefore, our emotional connection with others do not reduces our rational capacity to understand the external reality, it actually increases it because provide us with more information coming from the others. We will say more on this issue in chapter four.

¹²¹ Sherif 1937

¹²² p. 72-73

they can easily understand”¹²³. Investment goods and sinful goods¹²⁴ are prime candidates for Nudges, because choices and their consequences are separated in time. In general markets do a good job – competition protects the customer; but it is not always so. There are many clear examples in which markets do not work: extended warranties in small appliances are a typical bad deal for customers, many TV announced offers are customer frauds, and so on. For these frequent market failures, in which customers are not properly informed, there are two possible solutions: 1) that governments outlaw these activities; or 2) Nudges. Thaler and Sunstein prefer the Nudges, because they define themselves as libertarian paternalists. In many cases *humans* prefer a default clause to making an explicit choice – especially when choices are rather complex.

Additional help is usually provided to avoid certain common *human* mistakes, example: on many corners in London the pavement has signs that say *Look right*. Feedback is already given by many products like our cellular phone telling us that the battery is low. Thus Nudges are all over the place. Thaler and Sunstein propose to use a government regulation call RECAP (record, evaluate and compare alternative prices) for complex pricing systems that are neither transparent not comprehensible to the customer like for example: credit cards, cell phone calling plans or auto insurance policies. As choices become more numerous and/ or vary on many dimensions’ Nudges are more helpful. Nudges in many instances are required to make sure that choosers actually notice the incentives they face – to establish salience. For example: “Cost-disclosing thermostats might have a greater impact than (modest) price increases designed to decrease use of electricity”¹²⁵.

For Thaler and Sunstein, the six principles of a good choice architecture are: incentives, understand mappings, defaults, give feedback, expect error and structure complex choices.

Savings, Investing and Borrowing

Saving decisions are particular difficult for individuals for they require a view of the long run. In real life it is observed that “roughly 30 percent

¹²³ p. 74

¹²⁴ Investment goods include things like exercise, flossing, and dieting. In these goods costs are borne immediately, but the benefits are delayed. Sinful goods include things like smoking, alcohol, and jumbo chocolate doughnuts. In these goods we get the pleasure now and suffer the consequences latter.

¹²⁵ p. 101

of employees eligible to join a 401(k) plan fail to enroll¹²⁶, and that in the UK even in defined-benefit plans that do not require an employee contribution only 51% signed up. Thus, people do not take care of their future properly. People usually chooses very low saving rates. There are two options: 1) automatic obligatory enrollment; or 2) a Nudge. The Nudge will be designed to require every employee to make an active decision about whether to join the plan. Participation rates in a company increased 25% due to the Nudge. A Nudge that has been very successful is called, Save More Tomorrow. It is typical used with automatic enrollment, and people from the start choose whether or not to commit to an escalation schedule in which saving rates are increasing in future dates. For example, of an initial group that did not want to increase its today saving rates, 78% decided to adopt Save More Tomorrow; which means they accepted to commit to save more in the future. This Nudge has been so successful that today 39% of large employers in the United States have adopted some type of automatic escalating saving plan.

In the investing area, most people do not have the necessary skills to do the right long term decision between stocks and bonds. A common mistake for example is to own large amounts of stocks of the company where they work, producing inefficient portfolios not well diversified; even the law has made the mistake to promote the ownership of one's company stock. A useful Nudge is to provide an easy alternative of a full diversified portfolio that will automatically rebalance through time. This is an area in which much can be done.

In the credit markets, uneducated and unsophisticated customers are at a disadvantage. With an average fee of 3% in loans averaging \$105000 dollars; Latinos paid 3.36% (an additional 12.8%) in their loans, and African-Americans paid 3.39% (an additional 13.6%). RECAP Nudges, Thaler and Sunstein argue, would be very helpful in the areas of mortgages, student loans and credit cards.

Health

In general, "the more choices there are, and the more complex the situation, the more important is to have enlightened choice architecture"¹²⁷.

¹²⁶ p. 109

¹²⁷ p. 179

Today's the prescription drugs plan for seniors give many options and provide no help, a RECAP program will be needed.

Organ donation is a case where Nudges make a very clear difference. If an explicit consent rule is used in which people has to take steps to demonstrate that they want to be donors, consent is very low, in Germany only 12% consent, and donation turns out to be insufficient for the demand of organs. The alternative of course, is to make donation obligatory but if this is politically rejected, Thaler and Sunstein recommend a Nudge – presumed consent. Presumed consent means that people has to take steps to register their unwillingness to donate (just the reversal of explicit consent), presumed consent increase consent a lot (in Austria 99% consent was obtained). Abadie and Gay (2004), showed that the higher consent rates associated with presumed consent were in average 16% higher than previous donation rates.

The best approach to fight global pollution is an adequate price system of incentives, but better disclose information for customers will bring additional help. Public disclosure on the *risks of smoking* and on the *Toxic Release Inventory that firms have* had been very useful. Thaler and Sunstein propose, that the government should create a *Greenhouse Gas Inventory* which should require disclosure by the main emitters. In general, informational Nudges do help.

Other Areas

Other areas may also benefit from choice architecture, designed to help the decision maker; such is the case of education. Choosing a school is a difficult problem, that requires an adequate Nudge. Thaler and Sunstein also propose, that patients should not be forced to buy the right to sue the doctor for negligence, as it happens today. In addition, they propose to replace official marriages for civil unions to avoid controversy with religious institutions. They mention that there are many other Nudges that exist like Give More Tomorrow, The Charity Debit Card and Tax Deductions, Stickk.Com – to help people remind their commitments, Quit Smoking Without a Patch, Motorcycle Helmets, Gambling Self-Bans and many others.

An important point Thaler and Sunstein make, is that governments should not be secretive as to the Nudges they are implementing. A good principle to understand as a point of reference, they argue, is the one of asymmetric paternalism, developed by a collection of behavioral

economists and lawyers, which says “that we should design policies that help the least sophisticated people in society while imposing the smallest possible costs on the most sophisticated”¹²⁸. But as libertarian paternalists Thaler and Sunstein argue, that the costs to the more sophisticated should be as close to zero as possible. They as libertarians are committed to gentle Nudges that preserve freedom of choice. In *Misbehaving*, Thaler mentions, that the Economic and Social Research Council reports in 2014 that 136 countries have incorporated behavioral science in some aspects of public policy.

Comment

Behavioral Economics methodology to criticize traditional economics works as follows: 1) It shows that humans fail in their process of decision making, due mainly to the psychological characteristics of system 1; 2) Intervention is required – in this case Nudges are recommended. But, as we will show, the link between 1) and 2) is not necessarily well established.

The following list of failures due to system 1 is not exhaustive, but good enough for our purposes. Decision failures due to psychological factors are: 1) Anchoring, 2) availability heuristic, 3) representativeness, 4) priming, 5) optimism and overconfidence, 6) status quo bias, 7) loss aversion, 8) psychologically overweighting rare events, 9) probabilities miscalculation, 10) reversals, 11) safety considerations, 12) endowment effect, 13) framing, 14) psychological memory, 15) time and adaptation as psychological dimensions, 16) regret, 17) mental accounting, 18) sunk costs, 19) inconsistent customer behavior in bargains, 20) the house effect, 21) the break even effect, 22) time inconsistent preferences i.e. hyperbolic discounting of the future, 23) altruistic behavior, 24) cooperative behavior, 25) punishing non cooperative behavior, 26) psychological fairness, 27) reciprocity, 28) conditional behavior, 29) lack of self control, 30) influences of advertising or other information, 31) conformity - peer pressure.

Decision failures are also due to other three factors, mentioned by Thaler (2015): 1) economic transactions that do not allow for learning, 2) experts with conflict of interest, 3) lack of salience

The reasons to establish a Nudge, according to Thaler and Sunstein, are: 1) decisions that are difficult and rare, for which economic agents do not get prompt feedback, and 2) when they have trouble translating aspects of the situation into terms that they can easily understand.

¹²⁸ p. 252

Notice the jump: Decisions that are difficult and rare are usually subject to expert advice, abundant information search and so on. Difficult rare decisions are never taking without the aid of system 2, they are always the consequence of time invested in analyzing the situation. The fact that decisions do not get prompt feedback is a characteristic of the market which is unrelated to the psychological characteristics of system 1. If decisions in this case are wrongly taken, it is consequence of the lack of information or knowledge due to the fact that the customer does not get prompt feedback because market structure inefficiencies; but not to the psychological influences of system 1. What Thaler (2015) and Thaler and Sunstein (2008) are really talking about is: a market failure either in information and knowledge or in the market structure that permits lack of salience and/or experts with conflict of interest – but it is unrelated to decision failures due to psychological factors. The trouble of translating the decision into terms they can easily understand is a matter again of education and information, which the market should do – and in occasions may not do it properly. All of these may be good reasons for government intervention, because they do constitute market failures; but they are related to informational - knowledge problems or market structure inefficiencies that had already been pointed out by Information Economics, Institutional Economics, Keynes and others. *The point to emphasize is that the main reasons mentioned by Thaler (and by Thaler and Sunstein) to establish Nudges, are not really link to the psychological characteristics of system 1 argued by Behavioral Economics as causes of decision failures.*

Although there are many others, the following list of interventions is good enough for our purposes to show that many interventions required are not link to failures due to system 1. NL = not link to psychological causes; L = link to psychological causes.

List of Intervention required: 1) Save More Tomorrow - L; 2) A Diversified Portfolio: which automatically rebalance through time - NL; 3) RECAP in mortgages -NL; 4) RECAP in student loans -NL; 5) RECAP in credit cards -NL; 6) Nudges for the financial mistakes made in the 2008 crisis -NL; 7) Prescription Drugs Plan for Seniors -NL; 7) Presumed Consent for organ donation - L; 8) Disclosure of the main emitters of pollution -L; 9) Choosing a school- NL; 10) freedom to buy or not the the right to sue the doctor for negligence -NL; 11) Replace official marriages for civil unions- NL; 12) Give More Tomorrow -L;13) The Charity Debit Card and Tax Deductions -L; 14) Stickk.Com – to help people remind their commitments- NL; 15) Quit Smoking Without a Patch -NL; 16) Motorcycle Helmets -NL; and 17) Gambling Self-Bans -NL.

Only five out of the 15 interventions mentioned are link to psychological factors, these are: 1) Save More Tomorrow; 7) Presumed Consent for Organ Donation; 8) Disclosure of the Main Emitters of Pollution; 12) Give More Tomorrow; and 13) The Charity Debit Card and Tax Deductions. And even in these cases, the link is more in the solution than in the causes of the problem. Take for example Save More Tomorrow, which arguably has been the most successful Nudge. People is ignorant of the future consequences of not saving enough; they need education and information. Once they get it, their system 2 pays attention. And if the education program is well done they will start saving enough. Now, the important contribution of Behavioral Economics is to show that the same individual with the same information and education take different decisions depending on the default clause. And as an initial strategy it may fine to change the default clause to increase savings. But such strategy has to come, as Thaler and Sunstein themselves argue, with transparency i.e. informing people that the default clause has been changed and why it was changed; and this transparency to be efficient requires again of education and information. We cannot get away from the problem that the real issue is that the individuals do not fully understand the consequences of not saving enough; and, therefore, at the end of the day, either the decision has to be taken by the society or the individual has to be educated and informed of the consequences¹²⁹. As for the fact that individuals tend to underweight inadequately equities in their portfolios, again it is a question of information and education. I personally have given many lectures on asset management all over the world, and once you teach and inform people, they always change their asset allocation towards more equities. Presumed Consent for Organ Donation is also one of the key successes of Behavioral Economics, but again transparency involves informing why the default clause was change and involves educating and informing the individuals. If we are not going to inform and educate the individuals, we may just forget about Presumed Consent and we should make organ donation mandatory. This brings us to a key issue either the decision should be taken by the individual or by the society (who should do it is a political choice, that should be taken through democratic routes); but, whoever takes the decision has to be well informed and educated

The true contribution of Behavioral Economics is that changing the default clause and the time horizon (Save More Tomorrow, Give More

¹²⁹ All this however does not reduce the importance of the contribution of Behavioral Economics in practical terms.

Tomorrow, Presumed Consent), providing additional information as to who is doing what (Disclosure of the Main Emitters of Pollution), or facilitating the action and providing information (The Charity Debit Card and Tax Deductions) do influence people decisions. Therefore, Thaler argues, there is nothing like a neutral individual decision. But, while this is true, it does not mean that, given everything else, there are not individuals' decisions. That new information and education is required for good individual decisions is not new at all. Enlighten the individual has been an institutional concern both of public and private organizations for a very long time. What is new is how sensitive are the individual decisions to the way the questions are ask or framed. But again the more educated and well informed the individual is, the more system 2 enters in the decision and the less he is influence by system 1.

Nudges do provide a middle road for society to take decisions in instead of the individual. In one extreme (lets say in the extreme right position of a line - with not necessary ideological implications) the individual makes his decisions only with market help – due to which he is assumed to have proper knowledge and adequate information. Moving somewhat to the left, along the proposed line, if we relax the assumption that markets do allow the individual to have proper knowledge and adequate information, something many schools in economics have done, then the government and other non market social institutions do need to influence the individuals' decision by providing him with the lacking information and knowledge; in fact, many of the proposed Nudges belong here, and as such they do not represent a new original contribution – governments and non market social institutions have provide knowledge and information to the individual for a very long time – that it may be insufficient and that maybe more in this direction has to be done may be true, but it is hardly a new significant contribution. If we continue moving left along the line, we find Behavioral Economics, which works under the assumption that in many instances individuals make decisions under a strong influence of system 1. And therefore due to the psychological characteristics of *humans* Nudges must be created to guide individual decisions to proper results. And they argue it should be done with transparency. Finally, in the other extreme (the extreme left), society takes the decision fully, in instead of the individual.

The previous exercise discovers at once one of the main problems to be discussed about Nudges. They require the government to take the decision as to the default clause or the frame or any other psychological

technique; to influence the individual's decision in the direction that the government wants. Since the government knows how to influence the individual because knows how he will react; truly, to a large extent, the government is taken the decision. It is true that we are in the middle of the road, because the government does not take fully the decision; but that does not mean, that the government to make this middle of the road decision has not to be politically approved by democratic routes. Transparency does not solve this issue; the government do require political approval. Either representative democracy or direct voting should decide who takes the decision: 1) fully the government; 2) the government only chooses the psychological technique to influence the individual; 3) fully the individual. In any case, information and knowledge is required by whoever will take the decision.

It is difficult to argue with success; Nudges have already produced good pragmatic results in many areas. There is a clear contribution, among others, in the understanding of individual's saving decisions, in investing behavior and in the decisions related to organ donations. Thus, for many microeconomic problems, the Nudges have shown to be helpful. However, as we had been arguing, Nudges are useful for a set of market failures which are not necessarily due to the influence of system 1 or to the lack of usage of the abilities of system 2. In many cases the market failures that the Nudge addresses are the consequence of the lack of information, the difficulty to understand such information due to lack of knowledge and/or inefficient market structures which should be properly regulated. Economists have been aware of market failures of these types for a long time, and the governments and the non market social institutions have always devoted great efforts to try to help individuals to better understand their alternatives. Nudges are a good pragmatic contribution, but it is only *partially due* to Behavioral Economics.

Behavioral Economics has been unable to show that due to system 1 individuals *educated and well informed* cannot take rational economic decisions, understanding rationality as meaning that the individual knows what is good for him. This individual rationality, we have known for a long time, requires external support (that needs to provide access to information, education-knowledge, and processing analytical capabilities), which may come from the markets, the governments or non market social institutions. But what is new, and in our opinion is *the true contribution of Behavioral Economics is: that its research is very important, in the sense that it points out areas in which individual economic decisions due to the psychological char-*

acteristics of humans will need more external support to arrive at the proper decision. The research, however, while successful in some microeconomic problems, has not contributed very much in macroeconomics, as we will see in the next chapter,

Before we move to the next section we must remind the reader that, even though the well educated and informed individual knows what is good for him – only knows it within the limits that the Institutional Arrangement allows. An acceptable market equilibrium nor only requires that individuals express their preferences, but also the proper Institutional Arrangement. Remember Tirole example, in a corrupt economy, what is good for each individual is to be corrupt- even though it is not truly what is good for the society, nor for the individuals that live in it. Therefore, there is room for institutional choices, which are beyond individual choices. Now, Who, should decide amongst the institutional choices? It is for democracy to solve. But, in some cases it may be democratically agreed that representative democracy may do a better job than direct voting in these issues. And in other cases institutional choices are taken by other institutions belonging to the historical Institutional Arrangement – such as the Central Banks and others, which even though basically at the end depend on democratic decisions – they always have their proper sphere of action, in which they decide amongst institutional choices.

BEHAVIORAL MACROECONOMICS

Within neoclassical contemporary economics, as we said before, there has been always two schools of thought. In the first one we may put together Keynesians and Post Keynesians. In the second one Monetarists and Rational Expectations Theorists. Both schools shared the same view on Welfare Economics and in General Equilibrium Theory. But in macroeconomics, they have always had very different and even antagonistic positions. Keynesians and Post Keynesians believed that Government interventions are required; and they dominated economic thought from the Second World war to the 80s. Monetarists and Rational Expectations Theorists argue that that government interventions are not needed – that the markets, if left to operate by themselves, will always maintain the economy near full employment equilibrium. This second school had been a fervent defendant of free markets and the predomi-

nant view in macroeconomics from the 80's until the 2008 financial crisis. Becker's introduction of non-economic motives in the individual's utility function belongs to the second school. Behavioral Economics defends that governments must intervene; therefore, it is closer to the first school of thought. In fact, Behavioral Macroeconomists see themselves as followers of Keynes. Although, as we will argue they really are not.

Economic Depressions

In *Animal Spirits* first published in 2009, Akerlof and Shiller argue that “declining animal spirits are the principal reason for the recent economic crisis”¹³⁰. For them, the understanding of the main drivers of the economy “lie somewhat outside the traditional boundaries of economic research, in the realm of psychology...”¹³¹. They identify five psychological factors: confidence, fairness, corruption and bad faith, money illusion, and stories. They defend that the invisible hand story “although right in a fundamental way, is wrong at the level of detail and approximation that is necessary to explain what we need to know about macroeconomics”¹³². The 2008 financial and housing crisis “was caused precisely by our changing confidence, temptations, envy, resentment, and illusions – and especially by changing stories about the nature of the economy”¹³³.

For them, Keynes for the first time gave us an understanding of how macroeconomics really behave, and it is unfortunate that “as the memory of the Great Depression has faded, so too has an appreciation and understanding of Keynesian theory”¹³⁴. They mentioned that with the success of the world economy after World War II, it came in the 1980's a new view of the economy which argued that the private sector does not need regulation. And they argue, that the 2008 crisis has shown how wrong was this view; “capitalist societies have problems if they are not watched over”¹³⁵. To get out of the crisis they say “conventional fiscal and monetary policy should aim for full employment levels of demand. But, additionally, with the collapse of investor trust, credit markets, will

¹³⁰ p. vii

¹³¹ p. viii.

¹³² p. xi

¹³³ p. 4

¹³⁴ p. xi

¹³⁵ p. xiv

fulfill an important economic role, also need prosthetic help from the government”¹³⁶.

Confidence

For them confidence is more than just prediction it means trust and “the very meaning of trust is that we go beyond the rational. Indeed, the trusting person often discards or discounts certain information. She may not even process the information that is available to her rationally, even if she has *processed* it rationally, she still may not *act* on it rationally. She act according to what she *trust* to be true.”¹³⁷. “confidence – implying behavior that goes beyond a rational approach to decision making – indicates why it plays a major role in macroeconomics”¹³⁸. For these authors “confidence comes and goes. Sometimes it is justified. Sometimes it is not. It is not just a rational prediction. It is the first and most crucial of our animal spirits”¹³⁹.

Comment

Akerlof and Shiller say that they follow Keynes, but they twist Keynes thinking to adapt it to the irrational thinking associated with Behavioral Economics. In Keynes confidence is nothing else than the appraisal people makes of the capacity of the institutions to confront uncertainty as to the unknown future. It is the Institutional Arrangement the one that provides the required certainty for the economic agents to operate. But the appraisal in Keynes is not irrational, as it is in Akerlof and Shiller. Faced with uncertainty, economic agents do not have any other rational way to act than creating institutions that define a reasonable framework to operate economic transactions; when such framework fails, confidence goes down. But the failure of the institutions is real and the assessment of such a failure is rational. Confidence in Keynes is not just volatile irrational trust like in Akerlof and Shiller.

Mervyn King, who was for ten years the Chairman of the UK's Central Bank, argues in his 2016 new book the importance of Keynes' uncertainty to understand the 2008 crisis; but he emphasizes that *Radical Uncertainty*, as he calls it, does not mean psychological irrationality. King is right. We

¹³⁶ p. xiv

¹³⁷ p. 12

¹³⁸ p. 13

¹³⁹ p. 14

must not confuse future uncertainty with psychological irrationality, as Shiller, Akerlof and others have done.

In an economic boom, economic agents do not ignore that houses are expensive in relation to incomes, they read the newspapers, and do not ignore that the interest rates are unusually low. And they *do not process the information irrationally*. They have the information and they process it rationally -i.e. in the extreme, we can even assume that according to a rational expectations model. But that does not mean that what is rational is for them not to buy because they have identified a boom. The key to understand Why? is the notion of real time (in which Shackle always put emphasis). To know that in the long run the real estate prices will return to a rational average in terms of its replacement cost (construction cost) does not solve the problem of when will it happen. The models run in an abstract time different from the historical-time in the real world where economic agents live and die. Economic agents do have an age. In this way, even taking all the information and using it rationally -having the best model-it is rational to buy a good that is expensive-simply because what is not known is how much more expensive it will get in the real period that is of interest. Economic agents do not buy the house without calculations and only guided by their irrational emotions. They do make calculations, and make them rationally, with information and with expert's advice, and in the extreme there is nothing wrong with using a rational expectations model to reproduce what people do. But the model has the limitation that cannot forecast when in real time will the boom end. It can not reduce future uncertainty as to the unknown. Take the example of Amazons, no rational expectations model would have predicted the boom that occurred in its stock price. The acquisition of this company, as of others, implies an optimistic vision of the future. If it goes well then it is said that the economic agent had a great vision, if it goes wrong is argued that he was irrational. In the face of uncertainty, we act. Booms have logical reasons to develop. The economic boom may continue for many more years or not, nobody knows.

The real estate boom could of have lasted longer, real estate prices in general, even when already high, were not the reason for the crisis. It was not irrational for participants to buy at high prices like Shiller had argued; with the low interest rates, *it was the rational think to do*. And to argue that buyers should of have forecasted the increases in interest rates that happened years' latter is to ask them to have done something that not even the professional markets did, futures of interest rates were low too. And just to know that interest rates will eventually go up, does not provide

relevant information for present economic actions – because what is not known is when will they go up. Participants in the subprime boom could not have predicted that interest rates would go up as rapidly as they did. If someone could do this kind of predictions with certainty, it could become immensely rich. There was nothing irrational in buying houses.

Real estate in Europe was much more expensive than in USA, yet the crisis started in USA and remain there for almost two years. Even using the best rational expectations models no body is able to predict for how long a market would remain overvalued or undervalued, adjustments may take decades. Economic agents buy in a boom not because they act irrationally, but because there is future uncertainty and it makes decisions very difficult. That you have to make decisions in a world with uncertainty and real time, does not mean that you are irrational in taking them.

We will go back to discuss rationality in the next chapter and we will see that the rational expectations model is likely an extreme assumption as to the way people process information, but it is also an extreme to assume that they are irrational or non rational. But beyond the discussion as to What rationality really means? the point that have to be stress is that *even with full rationality economic crisis can occur once we relax the assumption of perfect foresight and we introduce real uncertainty as to the unknown future*, due to which the probability of future events cannot be estimated. Before we finish this section, we will get back to the 2008 crisis and we will see why Akerlof and Shiller are wrong in the explanation of how did it happen; but before we do that, we should proceed to discuss the other four elements of animal spirits proposed by these authors.

Fairness

They quote the experiments of fairness of Kahneman and others; and unemployment according to these authors is the consequence that employees ask for a fair wage and employers give it to them because employees then respond with more productivity; but the fair wage is above the clearance level, therefore there is unemployment.

Comment

This theory is far away from Keynes. In fact, in the Great Depression wages were going down, and Keynes argument was that they did not go down as quick and as far as they should because future uncertainty as to what future prices will be and as to what other workers will do. Fairness

is a microeconomic element showed in laboratory experiments that does not have econometric validity to explain the massive unemployment produced in big economic crisis.

Corruption and Bad Faith

They discuss the corruption in corporate America before the 2008 crisis, and argue that it was one of the elements that caused it. Recessions they argued always involve corruption scandals. They describe Milken's junk bonds, Enron, and the irregularities with subprime loans. They argued that the business cycle is connected to fluctuations in the level of corruption which are related to "cultural changes over time to facilitate or to hinder aggressively competitive or predatory activities"¹⁴⁰.

Comment

There are several problems with introducing corruption as an element producing economic crisis. First: Japan, Korea and China have grown quite efficiently with corruption. Of these countries only Japan entered a major crisis. If corruption produces major economic crisis, Korea and China should of have had one already. Second: the major corruption events happened after the banking crisis in 2008 had already started, not before it. As we will argue the 2008 crisis was not a real estate crisis, but a banking and credit crisis, therefore the corruption that could had happened in real estate - before the banking crisis started - was irrelevant. Third: most irregular mortgages happened after the beginning of the banking crisis and as a consequence of the rise in interest rates, and were related to ALT A loans and not to subprime loans¹⁴¹. Fourth: there was not corruption in rating agencies. Fifth: Banks held 75% of the MBS (Mortgage Back Securities) that were in private hands; clearly they were not corrupt when structuring the securities that they finally held. Akerlofs and Shiller's argument that corruption causes major economic crisis is just not sustainable.

Money Illusion

They argue that at low levels of inflation there should be some degree of money illusion.

¹⁴⁰ p. 39

¹⁴¹ ALT A loans have higher credit quality than subprime loans, but less than the prime loans.

Comment

It might be correct, there is wide acceptance that monetary policy given high Central Bank credibility might be a powerful instrument. This, however would explain only very minor fluctuations around the full employment equilibrium. And as it has been shown by rational expectations, money illusion cannot explain the stagflation phenomenon. Money illusion, while a Keynesian argument, was not a Keynes's argument. For Keynes, in a large recession monetary policy is not effective, but not due to money illusion, in fact it is so, precisely because there are no illusions; people do understand well the weaknesses of the Institutional Arrangement to solve the situation, and that is why nobody translate the additional monetary demand into real demand. Keynes was not interested in short term fluctuations with low levels of unemployment in which they might be some money illusion, he was concerned with very large fluctuations like the Great Depression in which there is just no role for the money illusion argument.

Stories

For these authors "confidence is not just the emotional state of an individual. It is a view of other people's confidence, and other people's perceptions of other people's confidence"¹⁴². There are new era stories that spread like an epidemic. Confidence is as contagious as any disease.

Comment

It is true that any Institutional Arrangements does have a corresponding story, a Conceptual System that bounds the institutions together. Therefore, any economic situation does have a story attach, which is reflected in the actual institutions that exist. Both stories in the Conceptual System and real institutions operating in the real world define the Institutional Arrangement. But these stories are not just imagination, nor are they the outcome of irrationality. They are built as part of the true real history of the economy in question, and they are part of the survival characteristics of such society. Stories and Conceptual Systems are not irrational and do not have whimsical abrupt changes, they have a rational survival relatedness with reality which is required for subsistence. Stories may end up being wrong ex-post but ex-ante, at their time, they are always reasonable

¹⁴² p. 55

and compatible with the known real facts. Such facts may be read in an optimistic or negativist mood; but the mood is not just irrational either. It depends upon a series of events that seem to be changing the Institutional Arrangement in question. We should emphasize that stories are there all the time, and therefore major economic crisis that occur sporadically cannot be explained just by the presence of stories. There have to be specific real events changes that sporadically modify the story, institutional inadequate policies that shake the confidence of the people on the capacity of the institutions to face properly an uncertain future.

The 2008 Crisis

The best way to understand the consequence of using Behavioral Economics for macro problems is to review Akerlof and Shiller explanation of the 2008 crisis. Basically, for them *animal spirits* produced a real estate boom which eventually had to crash and it did. And “in its wake it has left the biggest real estate crisis since the 1930s, the so-called subprime crisis, as well as a global financial crisis whose full dimensions have yet to be grasped”¹⁴³. Due to *animal spirits* “it appears that people had acquired a strong intuitive feeling that home prices everywhere can only go up”¹⁴⁴. The story did spread mouth to mouth and created cycles of feedback. “Money illusion appears to explain some of the impressions that homes are spectacular investments”¹⁴⁵. This housing boom was greater than ever before because of the political intention to provide housing to the most disadvantaged population. “The feedback that produced the epidemic of home-price increases had institutional, as well as cultural and psychological correlates”¹⁴⁶. And “In this atmosphere it was easy for mortgage lenders to justify loosing their own lending standards”¹⁴⁷.

Comment

The problem with these authors argument is that major economic crises appear almost from nowhere, from *animal spirits* which dynamics is myste-

¹⁴³ p. 149

¹⁴⁴ p. 150

¹⁴⁵ p. 152

¹⁴⁶ p. 155

¹⁴⁷ p. 155

rious and unpredictable. There is no doubt that markets do have herding in the sense that people is trying to guess what others will do. But booms do not start out of nowhere. Neither do crashes. They start with stories and in this they are correct, but two points must be stressed: 1) These stories always do have a rational component. And 2) They have to be institutionally supported by the financial authorities. The critical point is not whether there are or not psychological influences when investing at the individual level, because it is clear that they are. The real important discussion is: If this psychological influences at the individual level define the market prices or not? Keynes' and Knight's uncertainty means that the future is not known and investors have to built stories about what is going to happen and doing so they can be optimistic or pessimistic, but there is always real basis to do so. In *Irrational Exuberance*, Shiller argued that the mid 1990s stock market boom was due to the story of the invention and exploitation of the Internet. One may argue ex-post how accurate was the story, and whether it was or not overoptimistic; but, it was a real story. People that belief in it and have chosen to invest in companies that benefited from the latest so called TIC¹⁴⁸, technological revolution. had made a fortune. Today the largest companies in the USA stock market are those related to the TIC revolution. Given uncertainty people have to create stories, but they do it based in the best available information they got, which is always insufficient and requires intuition and risk taking – risk in a non probability sense. Manias do extend market prices away from what pure fundamentals can justify, but not irrationally - people do their best guess using both their emotions and their reason. Manias are not due to irrationality, but to uncertainty.

In the 2000s prices in real state in USA went up because there had been a long economic boom which had increased substantially the consumer's wealth and stock prices have become expensive while real estate was still reasonably priced¹⁴⁹. Thus, fundamentals did indicate buying real estate. The 2008 crisis was not the consequence of the crash in real estate. Two facts strongly reinforce this view: 1) real state prices in Europe have increased much more than in USA, and the crisis did not happen initially in Europe, it happened in USA; and 2) a careful analysis of real estate indexes, reveals that real estate prices did collapse in USA only after the banking crisis had increase dramatically the interest rates. Therefore,

¹⁴⁸ It is denominated TIC, because it had been a revolution in: Information (the I), Communications (the C) and work place technology (the T).

¹⁴⁹ Obregón 2011 and 2018b.

the 2008 crisis happened the other way around. The real estate crash did not produce the banking crisis; the banking crisis produced the real estate crash. The only crash that occurred before the banking crisis was the variable rate subprime real estate crash. The reason for the variable rate subprime real estate crash was the rapid upward movement in the Federal Reserve rate. There is a clear fundamental reason that explains why the boom happened in the variable rate subprime real estate market in USA and why the crash occurred: the rapid downward and upward movement in the Federal Reserve rate. Why did the crash in variable rate subprime real estate produce the banking crisis? Because subprime loans have been integrated into sophisticated securities that included mortgage loans of higher quality, the so called MBS (mortgage back securities); the reason to do this was to get an optimal mix of risk and return. The MBS became very popular because they gave a higher yield at a time when the Federal Reserve interest rate was very low. The MBS were so attractive, that banks kept 75% of the MBS held in private hands. The variable rate subprime crash had the consequence that it became almost impossible to value the sophisticated MBS that contained the variable rate subprime loans; and because banks held the MBS in such great amounts, they became concern with the financial health of each other and they raised the LIBOR rate (the rate at which banks lend to each other). The consequence was a generalized increase in interest rates, that eventually caused both the real estate and the stock market crashes. Thus, *there are clear fundamental causes of the 2008 crisis*, which by the way explain why it did happen initially in USA and not in Europe¹⁵⁰.

The crisis was not contained on time, because inadequate institutional policies were implemented, based in a market free ideology of no intervention. Financial authorities have become believers that risk was probabilistic and that markets could manage it very well; and therefore, that the markets were going to be very efficient in getting rid of the variable rate subprime crash. The authorities were wrong, uncertainty as to the unknown future is not probabilistic risk. And, as Knight and Keynes had already warned us: the markets could not manage this type of uncertainty. Credit confidence in a credit economy is the key for economic transactions. The only one that could have had prevented the credit deterioration that happened was the government, by taking out the subprime variable rate loans out of the bank's books (which in the beginning was not an expensive policy to take, and would of have been the easiest and most efficient way to pro-

¹⁵⁰ For a more detailed explanation of the 2008 crisis, see Obregón 2018b chapter three.

ceed). Because the government did not do it, the vertebral axis of the credit economy – the banks remain in trouble; and the economy entered a credit crisis. The LIBOR rate was raised, therefore interest rates in general in the economy also went up, and they caused the real estate and stock market crashes, which left the balance sheets of all market participants in disarray; and the economy entered a full-blown credit crisis. The credit crisis had real fundamentals – the economic agents' balance sheets had in fact deteriorate.

The 2008 crisis was not a psychological crisis, of generalized mistrust because the boom in real estate had been overextended. Booms do relate to stories about the uncertain future, and when they are wrong they do correct themselves, and there are manias and contagious effects in these processes. Market volatility is in fact explained by the uncertainty of the future. But a major collapse like 2008, always have in addition serious institutional fundamental mistakes. The recovery was slow because the economic agents' confidence has been shaken. But it was not an irrational deterioration of confidence - that we do not know where came from, neither that we cannot understand how can it be recover. The confidence of the agents has to do specifically with the authorities' capability to handle the unknown future through the proper Institutional Arrangement; when institutions notoriously fail, of course confidence is shaken.

In all the process of the 2008 crisis there was no money illusion, buyers read the newspapers and consulted specialists and they knew houses had become expensive; that however did not help them to predict when the boom was going to end, that is why they continued buying. Corruption did happen, but was not the cause of the crisis; it happened after – in the middle of the banking crisis. Some people have argued that the credit agencies were either irresponsible or corrupt and that the banks were greedy and abusive; but that story cannot be sustained in view of the fact that banks kept in their books 75% of the MBS held in private hands. Nobody shots himself in the foot. It is also argued that mortgages were offered with irresponsible schemes. This happened to some extent, but it did with ALT A loans and after the subprime variable rate loans crisis had already started and had already produced the banking crisis and the rise in interest rates. In fact, the rise in interest rates explains the mortgage flexible schemes. Thus, as we see neither irrational mistrust, nor money illusion, nor corruption, nor stories or fairness can explain the 2008 crisis. It was not produced by irrational animal spirits. But, by institutional mistakes that improperly managed the uncertainty as to the future. *There are fundamental mistakes and errors that explain the dimensions of the crisis.*

The view of the world of the strong proponents of free markets was shown to be wrong in the 2008 crisis. Risk is not just probability – risk, is also uncertainty as to the unknown future. Markets may manage well probability, but they cannot manage uncertainty. As we saw in the first chapter, the intent to show that markets operate freely by themselves can be counted as a failure in each one of the theoretical attempts; whether it is Welfare Economics, General equilibrium Theory, or Rational Expectations. There is future uncertainty, information is insufficient, and markets to operate need an adequate Institutional Arrangement. Thus, there are clear limits in the real world to the strong version of the rational economic man. Therefore, the strong version of the rational economic man has to be left to what it is. It is a very interesting theoretical framework of analysis to understand some key economic problems, like price determination and allocation of resources; and one that also provides an anchor against which other theories can be better understood. But to use the strong version of the rational economic man to understand major macroeconomic crises is clearly a mistake.

The fact however, that a strong version of the rational economic man cannot explain major macroeconomic crises; does not mean however, that such events are better explained by irrationality. Once we introduce uncertainty as to the unknown future, even if economic agents were to behave as a model of rational expectations indicates, we would still have major economic crises. What explains why we have major economic crises like 2008, and also frequent fluctuations in asset prices, is not that the economic agent is irrational but the presence of uncertainty as to the unknown future. Understanding these was the genius' contribution of Keynes. In the following chapter we will get to the question of How rational are we? And we will argue that we are not as rational as rational expectations assumes, but neither we are irrational as Akerlof and Shiller argue.

In the postscript of *The Nudge* Thaler argues that the 2008 crisis was partially due to: 1) extreme complexity in products offered to investors and in the extreme diversity and complexity of mortgages offered in the borrower's side; 2) lack of self control by refinancing the mortgage in instead of paying it; 3) the social contagion in the real estate bubble – he cites Shiller. Nudges he argues, if implemented would make a crisis like this less likely to occur. Is he right? As we had seen, he is not correct; none of the elements mentioned by him caused the crisis. Nudges would not have had help.

Then, What could of help? To prevent the crisis as we had argued the government would of have had to take out the infected assets (the variable rate subprime loans) from the banks. Because it did not do it, the economy entered a banking crisis that culminated in an international credit crisis of huge dimensions. In a credit crisis the monetary policy does not longer work, because when the Central Bank lowers its interest rate it does not impact the private bank's lending rate, which remains high due to the deterioration in the balance sheets of the potential borrowers. That is why the Federal Reserve had, for the first time in history, to enter the credit market directly, buying huge amounts of private assets. This wise move from the Federal Reserve, single handed, prevented the global economy from entering a depression like the 30s.

Keynes had two channels through which uncertainty affected the macro-economy: the liquidity preference and the marginal efficiency of capital. When confidence deteriorates the liquidity preference increases and the marginal efficiency of capital goes also up. The increase in the liquidity preference can be expressed in a credit economy by a larger spread between the private bank's lending rate and the Central Bank rate – which means that money supply increases do not flow into the real economy – do not translate into loans and higher aggregate demand – they remain only as increased liquidity. The deterioration in the liquidity preference can be better seen in a Minsky's model of the economy, which was latter used by Kindleberger in his book *Manias, Panics and Crises*. The Federal Reserve move to aggressively buy private assets – i.e. increase lending; clearly was a heterodox policy, that implicitly assumed that Keynes liquidity preference was right. As for the marginal efficiency of capital, the confidence deterioration will be reflected in an increase in the discount rate of the future flows expected from a particular investment. In theory, just as the Central Bank did provide credit directly, the government should spend more directly and it certainly did – again an implicit recognition that Keynes' marginal efficiency of capital was right.

But in our opinion, there was still more measures that could of had been taken. Once it was understood that confidence has deteriorated, rebuilding it was the major goal. Interventions to rebuild the balance sheets of the economic agents should of have been from the beginning the main policy. As we argued if the balance sheets of the banks had been clear from the beginning, by taking out the infected assets, we would not have had the crisis. But all along policy mistakes were made, by focusing first in bank's liquidity and latter on in bank's capitalization. None of these

policies made sense, because they did not clean the balance sheets of the banks. All along, what was needed was to removed the infected assets. Because they were not removed, the infection did spread through the credit system. Greater government expenditures were of course needed, this was the right policy, and it was done; but a further effort should of had been done to recover more directly the marginal efficiency of capital, by focusing government expenditures in areas where there could be co-investments with the private sector or where there was a clearly identifiable impact in the real demand that the private sector faced.

Consumption and Saving

Behavioral Economics introduces three psychological concepts into the theory of the consumption function: 1) mental accounting, 2) self control and 3) inconsistent time preferences. Inconsistent preferences mean that the discount rate varies through time. Animals in the laboratory are time inconsistent. And children capacity for postponing reward gratification varies among children and depends also upon environmental conditions. And because Kahneman's system 1, inconsistent preferences always involve a present bias. In mathematical terms, instead of exponential discounting the individual will use hyperbolic discounting. Due to the present bias individuals consumption in these models track income more closely. Hyperbolic discounting can explain the empirical fact that individuals do under-save for retirement and that there is a sharp drop in consumption at retirement.

To introduce self control in models with inconsistent preferences an individual is assumed to have two selves a planer and the doer. The doer is always under the emotional influence of Kahneman's system 1. Self control means that the planer creates situations that will make difficult for the doer to deviate in the future from the previously design plan. Mental accounting is one of such strategies of the planner. Mental accounting in these models can explain the empirical fact that the marginal propensity to consume from retirement accounts is very low, but the marginal propensity to consume from an unexpected job related bonus is very high. It can also explain why individuals hold simultaneously both illiquid assets and credit cards. And it has been argued that the expansion of efficient credit markets that allow to borrow against illiquid assets deteriorates the self control function, and may explain the empirical fact that national saving rates had been declining in the developed countries since the 70s.

Due to the present bias in these models, investment goods price is below its marginal cost and the converse is true for leisure goods. Firms learn to implement a pricing policy that takes into consideration the consumer's preference present bias. The notion of present bias has been applied to many other microeconomic consumption individual problems. For example, it has been shown that consumers buy single cigarette packs, or small packages of chip cookies or potato chips as a self control method despite the fact of their higher per unit price. In general, present bias models' results will be sensitive to whether the consumer is aware, partial aware or not aware of his inconsistent preferences¹⁵¹.

Comment

Savings in the neoclassical model are a function of the interest rate. And despite Sraffa's and other's criticisms, the neoclassical theory of capital can be reconstructed to show that for the general case there is an inverse relationship between interest rate (or profit rate) and the amount of capital. This reconstruction however does not close the model, changes in the interest rate (or profit) come from outside. Therefore, there is not an endogenous determination of the quantity of capital. As we saw in the first chapter, there is no way to have an endogenous optimal solution for the neoclassical model, therefore institutional choices are always relevant. Saving is not only an individual choice, it is also a social institutional choice, this can hardly be denied when one sees cases like Singapore or China. The long run savings of a given economy have to do with economic growth policies and with the long term borrowing capacity of a given particular country. Therefore, any explanations of countries national savings differences, that are only based in individuals' consumption choices are in general or insufficient or mistaken

There are however critical determinants of individual savings, that do define consumption patterns, which are key for macroeconomic stability. In fact, Keynes key contribution in the general theory, as Patinkin had argued, was his Consumption Function. Keynes made consumption a function of income and that allow him to understand and establish unemployment equilibrium.

However, in Keynes consumption was a function of present income and that left unexplained two critical empirical facts that were to be known

¹⁵¹ For a good summary of the implications of Behavioral Economics for the Consumption Function, see Dhami 2016.

after Second World War. First consumption increased substantially after the war, second Kuznets found that in time series the average propensity to consume was stable, that is it did not respond as much to present income as Keynes thought. Friedman's Permanent Income Hypothesis and Modigliani's Life Cycle Theory did accommodate the empirical facts. Modigliani in addition provided a theory that explained cross country data as a function of how old was the average population.

Recently, some new empirical data has shown the existence of an important inter-generational transmission of wealth, to be imputed to motives that are exogenous to the life-cycle model. Pensioners save a very high proportion of their income; young families, at least in Western Europe and Japan, save a positive and increasing proportion of their income; and the rich continue to save more than the less fortunate. This bequest motive for saving can be better understood in rational expectations models which calculate savings taking into account consumption needs of future generations. These rational expectations models, Barro's for example, will make consumption more reactive to actual income – because a non anticipated change in income is not associated with past income through adaptive expectations, instead it is read as a change in permanent income.

Each one of these consumption function theories is particularly useful to explain different historical data: Keynes' for large depressions, Permanent Income Hypothesis and Life Cycle Theory for post war data in which the economy was near full employment equilibrium, and Rational Expectations for explaining the bequest motive.

Keynes was concerned with big depressions and in them consumption is in fact mainly a function of present income. One could argue that in 2008 there was not only a higher marginal efficiency of capital – a higher discount to future investment returns, but also a higher marginal efficiency of consumption – that is a higher discount rate to future personal income. The drastic fall in income in 2008 deteriorated the consumer expectations substantially, and this can be seen either as: 1) a higher response of the consumption function to present income, as Keynes did; or 2) a drastic fall in permanent income – which cannot be explained; or 3) a higher discount rate of the future personal income. In any case, in any of the three options, the point to emphasize is that consumption - in major economic crises - goes drastically down and it does not recover quickly.

The Life Cycle Theory was very useful to explain post war data. With an economy near equilibrium, the view of the long run was es-

tablished and people then reacted much less at income variations in the short term. To be near equilibrium allows people to plan their savings in a longer horizon.

Rational expectations go even further away in the time horizon and have been useful to explain the recent data in terms of a bequest motive.

Behavioral Economics has shown that it is useful to explain other microeconomic consumption data such as under-saving for retirement, why individuals hold simultaneously both illiquid assets and credit cards, and that the marginal propensity to consume from retirement accounts is very low, but the marginal propensity to consume from an unexpected job related bonus is very high.

Neither the Permanent Income Hypothesis, nor the Life Cycle Theory, nor Rational Expectations, nor Behavioral Economics can explain why consumption – in major economic crises - goes drastically down and it does not recover quickly. For this explanation we need Keynes' theory.

Behavioral consumption models are generally very sensitive to the assumptions made, for example whether customers are sophisticated or naïve about their future preferences. If they are sophisticated the planner also has a very long vision into the future. The sophisticated planner is no one else than the rational economic man just that he is aware that in the future he might behave as a doer.

Behavioral Economics has proven its usefulness to explain key microeconomic behavior and it is natural to continue along these lines of research. Where will it go or how successful will it be? We do not know. The only thing which is true is that the framework of analysis used sustains itself in traditional economics, therefore it does not represent a new paradigm; and as of today it has not yet gain the popularity which the more traditional approaches enjoy.

An interesting mostly unexplored alternative to some of the Behavioral Economics explanations is uncertainty in Keynes sense. Given uncertainty as to how long one will live and as to what the future conditions might be, it makes sense for a reasonable man to be present bias and to under-save for retirement which will explain a sharp drop in consumption at retirement. Mental accounting then can be understood just as reasonable insurance - i.e. to buy illiquid assets is an insurance for the future and credit cards the consequence of present bias. With future uncertainty it is also understandable that the marginal propensity to consume from retirement accounts is very low but the marginal propensity to consume from an unexpected job related bonus is very high. The point to stress is

that given non probabilistic uncertainty, to explain many micro-empirical facts, we may not require any longer the assumption of the doer or of hyperbolic discounting. This unexplored alternative deserves further research.

BEHAVIORAL FINANCE

Thaler (2015) argues that the area in which Behavioral Economics has been more successful is Behavioral Finance¹⁵². As we will show, he is only partially right.

Before discussing the controversy between the Efficient Market Hypothesis (EMH) and Behavioral Finance, it is necessary to review how the notion of risk as probability developed in economics – and What it means? Since the EMH is a consequence of such notion.

The Three Great Contributions of Defining Volatility as Risk

Keynes and Knight's view of uncertainty as that which is unknown was replaced by postwar economists with the notion of a probabilistic risk based on information of what is known. This transformation had great consequences in the history of macroeconomics and finances. It is initially due to the 1981 Nobel Prize winner, James Tobin. In his initial contribution to the theory of the portfolio in 1956, Tobin argues that the reason people diversify their portfolio between bonds and cash, although the cash does not have any return, is because there is uncertainty in relation to the future rate of interest. Cash is a way to protect yourself in the event that interest rates rise and the bond position becomes a loser. To measure this future uncertainty, Tobin uses a probability function.

Thus, curiously enough, in an article in which it appears that Tobin is enriching Keynes's theory, he actually disappears Keynes' uncertainty theory from contemporary discussion. Tobin was successful, to the point that the great majority of the postwar economists have not read thoroughly Keynes' General Theory.

From the point of view of finances, Tobin's conception of risk had great consequences. Tobin's notion joined that of Harry Markowitz, who had already written that investment portfolios had to be diversified, and that the risk of the total portfolio could be measured through the co-variances of the

¹⁵² For good reviews in Behavioral Finance, see Thaler 1993 and 2005.

shares it contains. Tobin suggested that the decision between risk-free and risky assets could be done with his portfolio theory, and that risky assets could be selected using the Markowitz methodology that maximized performance for a given risk level. Markowitz's efficient frontier is the set of all portfolios that will deliver the highest expected return for each given level of risk. These concepts of efficiency are essential for the development of the Capital Asset Pricing Model (CAPM) model, developed later on by William Sharpe, a student of Markowitz's, who shared the Nobel Prize with him in 1990. CAPM proposes a systematic methodology to maximize return, minimizing total portfolio risk. It is based on the co-variances between the assets.

Sharpe proved that the most efficient portfolio of all, the one optimizing risk-return, is the portfolio that buys the entire market. Sharpe's result forever changed the professional investment fund management industry. *Pension investment funds increasingly acquired the total stock market index. This was the first great contribution of the definition of volatility as risk.*

Franco Modigliani (Nobel 1985) and Merton Miller (Nobel 1990), would also use the efficiency of the markets to show their theorem — that establishes that the value of a company is independent of its capital structure, *i.e.* it is independent of whether the company uses capital from its shareholders or market debt. *The Modigliani-Miller theorem is the basis for modern thinking about capital structure. This is the second critical contribution of volatility as risk.*

Fischer Black and Myron Scholes (Nobel 1997) would also use the markets' efficiency to show that the price of a derivative is independent of the price of the underlying asset, and depends only on the underlying asset's volatility. All things being equal, the theoretical value of an option is a monotonous increasing function of implied volatility. *The derivative market changed forever the practice of finance. This is the third enormously important contribution of defining volatility as risk.*

The Problems of Defining Risk as Volatility

Measuring volatility requires historical observations, therefore depends on the specific historical period used. To minimize this bias, analysts typically use a reference period as long as possible —though this does not take away its historical dependence.

One of the recent failures in the use of this type of risk estimates was the famous Long Term Capital Management (LTCM) fund that had the advice of Nobel Prize winners in economics, and the financing by the big USA banks. The LTCM fund developed risk models to invest in Russia.

Nevertheless, the Russian crisis of 1998 brought great losses to the LTCM fund. Why? Because the crisis did not behave like the historical past. There is really no way to know the future through probability models.

The basic reason for Lehman Brothers' bankruptcy was that the volatility of the markets did not behave like anything they had seen in recent history. Lehman's risk models failed, and Lehman broke eventually. The risk ultimately turned out to be something different, something more than just volatility. Volatility risk as defined by the various Nobel Prizes that studied it (such as Tobin, Markowitz, Sharpe, and others) cannot explain the 2008 crisis. Knight and Keynes were right after all. Unfortunately, their thinking was not followed by the main tradition because the economy of the developed countries took, after the 30s, eighty years to register a new global financial crisis.

The Derivatives Market and The 2008 Crisis

The CDS (Credit Default Swaps) are a form of credit payment insurance. In particular, some CDS insure the payment of CMOs (Collateralized Mortgage Obligation). In the 2008 crisis once the banking crisis happened and the interest rates rise a lot, the risk of no payment of the CMOs increased immensely – the volatility increased a lot. Therefore, the gross market value of the CDS went to the roof. In 2007, before the crisis, the gross market value of the global derivatives market (excluding interest rate swaps) was 8.6 trillion dollars –around 5% of the total value of all financial assets worldwide. Of the 8.6 trillion, the CDS represented 2 trillion - including those securing the payment of mortgage loan packages- CMOs. In 2008, the CDS went up to 5.1 trillion. Why did they go up so much? Because of systemic risk, when it occurs, risk changes are parametric. This is what drove AIG (the most important insurer in the United States) into bankruptcy.

Derivatives are the price of volatility, therefore, if volatility gets out of its historical trend and increases a lot, the derivatives price can move sharply. The gross market value of the CDS in 2007 did not include the systemic risk that materialized in 2008. Here we have a clear example of the two type of risks we have been discussing. What was in the value in 2007 was historical volatility risk; the value in 2008 was historical volatility risk plus systemic risk –institutional risk reflected in additional volatility, the risk of the unknown future, people did not know what was going to happen, that is why the CDS value moved so sharply.

What is Risk?

Who is right, Tobin or Keynes? Is it okay to use volatility as a measure of risk? Why did the value-at-risk models based on volatility (VAR) failed? Is it possible that so many Nobel Prizes are wrong?

There are clearly two very different visions about what is risk: 1) for Knight and Keynes, risk was uncertainty related to the unknown; and 2) for the postwar economist of the main tradition, risk was volatility. The two visions belong to two different conceptions of the economic world, constructed to explain different real economic situations. Keynes was concerned about explaining how situations such as The Great Depression and the Great Contraction of 2008 can arise. Postwar theorists were concerned about understanding the near-equilibrium economy that was experienced in the second half of the twentieth century. It is not the case that one vision of risk is correct and the other is wrong. In fact, they complement each other and are useful to explain distinct circumstances of the economic reality.

The notion of equilibrium is necessary to obtain contemporary finance theories' results. If the economy is close to equilibrium, historical volatility is a good indicator. Consequently, the three great contributions of risk as volatility do hold up. Derivatives markets work well, investing in the market as a whole is a good advice, and it does not really matter whether a company is financed with equity or not. However, if we move away from the equilibrium, the results of finance theories no longer hold up because historic volatility is no longer a good indicator. This is what happened with the LTCM fund or with Lehman Brothers.

Neither of the two visions is wrong, they just explain distinct realities. Depending on the type of problem we are going to solve, one vision or the other may be more appropriate. Both visions could be complementary. But what is certain is that postwar economist and regulators had totally disregarded the Knight-Keynes vision. The consequence was that in the 2008 crisis the market participants' conception of risk and of the regulators was only based on the vision of risk as volatility. Therefore, when the 2008 credit crisis occurred and produced unusual large volatilities—for historical standards—the financial market collapsed, because the risk models used could not contemplate volatilities so distant from the historical ranges.

The concept of risk as volatility is only sustainable in an economy close to equilibrium in which the future does not differ substantially from the past. The basic concept of VAR models is that the value at risk is

related to the historical volatility of the investments made, particular to their co-variances. When there is a generalized collapse of confidence, we move from the world of equilibrium to the world of Knight and Keynes and historical volatility ceases to function properly as a guide for the future —this is what happened in 2008.

The Controversy Between EMH and Behavioral Finance

The Efficient Market Hypothesis (EMH) argues that share prices reflect all information and consistent alpha generation is impossible. Neither technical nor fundamental analysis can produce risk-adjusted excess returns, or alpha, consistently. According to the EMH, stocks always trade at their fair value on stock exchanges, making it impossible for investors to either purchase undervalued stocks or sell stocks for inflated prices. As such, it should be impossible to outperform the overall market through expert stock selection or market timing, and the only way an investor can possibly obtain higher returns is by purchasing riskier investments. Data seems to confirm the EMH, since Jensen's PHD thesis it has consistently been shown that professional money managers do not do better than simple market averages. The basic assumption in the EMH is that any asset price will be equal to its future risk adjusted returns; which means that risk and return are related due to the definition of risk of Tobin, Markowitz, Sharpe and others.

Behavioral Finance has produced many results that seem to contradict the EMH. The following, even though is not exhaustive, is a list of such results: 1) De Bondt and Thaler (1985) have shown that Beta risk adjusted losers outperform winners; 2) it has been argued that value investing recommendations by Graham and others only work if understood as market price violations of EMH¹⁵³; 3) it has also been shown that Beta risk adjusted value stocks with either low price earnings ratios or low ratios of the stock price to its book value of assets outperform growth stocks (Lakonishok, et al. 1994)¹⁵⁴; 4) Shiller 1981, has shown that the price fluctuates more than the ex-post known discounted dividends; 5) Lee, Shleifer and Thaler (1991) have shown that the average discount in close end funds was correlated with the difference in returns between small and large companies and both were driven according to them by small investors sentiment. Thaler argues that the price in close end funds violates the law of one price; 6) Shleifer 1986, and Wurgler and Zhuravskaya (2002) , argue

¹⁵³ Thaler 2015, p. 221.

¹⁵⁴ See also, Thaler 2015, p. 227.

that the price of newly introduced securities into the S&P 500 index immediately jumps upwards despite the fact that there is no new information and that market crashes occur without any new information about the fundamental values; 7) Froot and Dabora 1999, shows that Siamese-twin companies merge on a x:y basis continue trading separately in different markets at trade prices distinct from the x:y ratio; 8) De Bondt and Thaler 1985, argue that winner stocks over a long horizon give lower subsequent returns and losers give higher subsequent returns; 9) Jegadeesh and Titman 1993, argue that there is a *momentum effect* – recent stocks market performance can carry over to the future; 10) De Giorgi and Legg 2012, argue that the overweight of the downside probability explains the equity premium; 11) Loss aversion is argued by Benartzi and Thaler 1995, explains the equity premium; 12) Odean 1998, maintains that loss aversion explains the disposition effect which may prevent people from selling stock below its purchase price; Bernard and Thomas 1989, and Michaely et al 1995 argue that there is a post-earnings drift.

All of these Behavioral Finance results, were however, not accepted by EMH defendants as a proof that the EMH does not work. The EMH defendants started to look for other definitions of risk under which many of the previous results do not longer hold. The debate in the EMH hypothesis continues to go on.

As a normative model Thaler thinks that the EMH is right, as a descriptive model he argues that it does not work. He argues that prices are often wrong – that the intrinsic value is only a normative value. But he recognizes that the second proposition, that there is no way to beat the market is true.

Comment

The EMH has similar problems to the economic cycle theory of rational expectations. None of the two can really explain the fluctuations in the economic/and or the stock market world unless we introduce Keynes' assumption of uncertainty as to the unknown future. Economic cycles cannot be really explained with rational expectations. The Phelps' islands *that do not share information* are required in Rational Expectations Models to explain economic cycles. But such islands do not make sense in *a world of full information* and rational expectations. Contractual theory and other rigidities introduced by contemporary post Keynesians are also difficult to defend and at most can explain short term economic cycles, but never great recessions.

We can hardly understand economic cycles and particularly big recessions, unless we take seriously the proposal that the future is uncertain and that the economic agents are always trying to guess how it will be (within a given Institutional Arrangement). Economic cycles are the consequence of changes in guessing the future. Major crises are due to institutional mistakes that jeopardize people's confidence in the institutions to provide future stability at the ever moving economic process of guessing the future.

Asset price fluctuations are related to economic cycles; they fluctuate with stories about the future; stories that will always be there because of the uncertainty about the future. Shiller finding, that the fluctuations in asset prices cannot be explained by dividends because the latter fluctuate much less, is the natural consequence of the uncertainty about the future. The fact that ex-ante prices are wrong in relationship to future ex-post dividends, do not mean that the prices are irrational – i.e. defined by psychological factors. Prices are the best reasonable guess ex-ante of such future ex-post presently unknown dividends; but, given uncertainty they will always be wrong, and will fluctuate more than ex-post dividends.

The stock market is the most liquid market in the economy, therefore is like a thermometer of what is expected in the future. While risk probability models link the past with the future, uncertainty as to the future remind us that it is not known and that parametric changes occur all the time, particularly at the level of each firm or organization. The market is always assessing these parametric changes in future expected returns and adjusting the prices accordingly. Therefore, given uncertainty in the Keynes- Knight sense, minor news may produce large asset prices moves. And there is a contagion effect, which we could observe clearly, for example, in the Asian financial crisis in the 90s. Where a sharp downward movement in the stock prices of an economy in macro-financial problems – Thailand – cause also a sharp downward movement in other Asian countries stock prices, even though their macro-financials were healthy. Eventually however, this contagious effects vanish as investors understand better what is really happening. The contagious effect can be either positive or negative; this is what Kindleberger denominated manias and panics. Therefore, uncertainty explains why even if we have rational economic agents analyzing the stocks and defining their intrinsic value, there will be significant volatility in the prices. Given uncertainty the stock market behavior is not smooth as one will expect from the EMH.

There is an unresolved tension in Thaler's views; because, if prices are wrong and can be identified ex-ante as wrong, then it must be pos-

sible to beat the market – which empirically does not happen. If they cannot be ex-ante identified as wrong and can only be argued as wrong ex-post, then the meaning of wrong is just the consequence of the fact that any measure of probability risk is an inadequate measure of future uncertainty-the future ends up being different than what the probabilities of the past indicated.

There is overall uncertainty as to the future and investors, as we said, are trying to read the future, and get optimistic or pessimistic, guided by news and institutional choices which are never very clear to read, and people follow others because nobody is sure of how the future is going to look like. But people guesses embodied in the price is the best that can be done ex-ante giving the future uncertainty. That is why the market cannot be beaten. The experiment of the Long Term Capital Fund managed by Nobel Prizes, among others, clearly show that probability risk models are not a good hedge against the future unknowns.

There may even be consensus upon the fact that houses are unusually expensive related to its replacement costs or that stocks prices are too high related to book values or to earnings – but that does not tell the investor what to do, because the length of the bubble is not known. They may remain expensive for a very - very long period. That is why you cannot beat the market. Uncertainty ex-ante cannot be reduced by ex-post information. Shiller results on ex-post dividends are not relevant as determinants of ex-ante prices.

Thaler shows that the surplus produced ex-post by football players do not correspond with the ex-ante price paid to acquire them. That means that to the EMH we need to add future uncertainty. Given uncertainty, nobody knows the future and therefore ex-ante prices and ex-post results should diverge. But the fact that there is uncertainty as to the unknown future, does not mean that people do not take into account all the fundamentals when they invest. The fact that there is uncertainty, does not mean that markets do not work, or that agents are not rational. The two points must not be confused.

Analyzing a gambling television game, Thaler points out that gamblers are not very risk averse, which for him puts some doubts into the traditional explanation that the high equity premium is explained by extreme risk averse behavior. The analysis also showed strong support for path dependence “Contestants clearly reacted not just to the gambles they were facing, but also to the gains and losses along the way”¹⁵⁵. The results were

¹⁵⁵ p. 300

replicated with students. A particular benefit of the TV game was that the stakes were pretty high. Benartzi and Thaler (1995), explains the equity premium by the fact that people look at their financial statement too often, and therefore they penalize the long term benefits of investing in stocks.

Thaler cannot have it both ways, either there is path dependence and future markets prices are forecastable in which case professional portfolio managers should be able to beat the market, or there is no path dependence because any available information is already in the price and that is why portfolio managers cannot beat the market.

People are not that irrational as to penalize the long term benefits just by looking to often in their statements. People is uncertainty averse. Real markets are not a game with known probabilities and infinite repetitions. Individual living time is a real constraint. An individuals live in an ever changing world in which the future is not known. Under these conditions to be highly uncertainty averse is an evolutionary survival trait. That is what explains the equity premium.

To take into account the uncertainty as to the unknown future does not mean that the behavior is irrational or mainly motivated by Kahneman's famous system 1.

Behavioral finance has been successful in showing that the strong version of the EMH cannot explain the high volatility in asset prices, nor other facts like: why ex-ante beta risk adjusted losers outperform winners, why ex-ante beta risk adjusted value stocks with either low price earnings ratios or low ratios of the stock price to its book value of assets outperform growth stocks, why value investing recommendations seem to work, why the average discount in close end funds is correlated with the difference in returns between small and large companies, why the closed end funds violate the one price law. However, all these results of Behavioral Finance are due to mixing ex-ante measures of risk and ex-post returns or ex-ante asset prices and ex-post dividends. All these measures cross the line of time between today and tomorrow - and they are a clear violation of uncertainty in the Knight-Keynes sense.

It is very important to emphasize what does it mean that the market cannot be consistently beaten. It means that there are no ex-ante rules that can be found to outperform the market. And this is theoretically a very strong proposition. Because if such rules could be found, the best business in the world will be to sale them, and as everybody learn to use such rules they would no longer work. The future cannot be known. If it could be known, it would be already the present. The great philosopher

of science Popper was once asked What did he thought that innovation was? He answered: Innovation, innovation is about what we do not know. This is what uncertainty is.

Uncertainty explains the high volatility in asset prices ex-ante versus ex-post dividends. And it also explains why ex-ante beta risk (or other ex-ante probabilistic measures of risk) is not correlated with ex-post returns. It just means that ex-ante probabilistic risk just does not fully express the true ex-ante uncertainty. There may be other probability risk that works better than beta, but none will work perfect because the ex-ante risk is not probabilistic, it is uncertainty as to the unknown.

Closed end funds do not violate the law of one price, they just have less liquidity and more uncertainty. Close end funds discounts are correlated with the difference between large and small stocks. because small stocks are less liquid than large stocks, small stocks are more uncertain. Losers must out perform winners because they are more uncertain, the fact that risk adjusted they continue to outperform means that the probability risk measure is not an adequate measure of uncertainty. Growth stocks are less uncertain therefore they should be outperformed by low P/E stocks or low P/Book Value stocks; and again the fact that even after risk adjusting they continue to be outperform just means that the risk measure is underestimating uncertainty.

The search for the correct risk probability measure will be unsuccessful and will give room to an endless discussion between the EHM defenders and the Behavioral Finance ones. However, if we are willing to accept uncertainty the name of the game changes. Any ex-ante measure has to be unsuccessful related to any ex-post measure. And in general, measures that combine ex-ante data with ex-post data are not very useful to understand the behavior of asset prices in a world of uncertainty.

Behavioral economist had been very successful in showing that the stock market does not behave as smooth as one would expect with the EMH, but it is not due to irrationality as Behavioral Economics argues, but to uncertainty. The main limitation of the EMH is that risk is uncertainty and not probabilistic.

Uncertainty explains why any measure of ex-ante risk will fail to correlate with ex-post returns, why risk adjusted prices will not behave according to the rationality of the EMH. Thus, clearly something is fundamentally wrong with the EMH – risk is not only probabilistic, it is also uncertainty. Behavioral finance has been able to show some of the limitations of EMH. However, it has not been successful in showing that

market asset prices are defined by irrational psychological factors. Given future uncertainty, asset prices are as reasonable as they can be.

Because there is uncertainty people is always trying to guess the future and position against it. And the only way to do it is by stories that link the past with the future. Now, due to uncertainty those stories are always changing and there is at times more optimism and at times less. Since any asset is nothing else that the present discounted value of a future stream of returns, as the view of the future changes it necessary produce asset price fluctuations. Such fluctuations are related to economic cycles with increased or lowered investment. The optimistic stories do create *manias* and disappointments may produce *panics* which if not well manage by the financial authorities may conduce to *crises*. Thus, there was a lot of true in Kindleberger's book. But it is important to point out that Kindleberger taught that financial crises were a thing of the past in the developed world, because in his opinion the Institutional Arrangement had learn to manage panics and prevent them from becoming crises. He was wrong, as 2008 have shown us.

Are there psychological factors in the *manias*, yes they are; are there psychological factors in the *panics*, yes they are; do herding explain to some extent both phenomenon; yes, it does. But all of this do not mean that economic agents are irrational. It is not irrational to follow group behavior when there is uncertainty. And the group is not irrational either, there are always some facts that change the story. Yes, they may be an overreaction, because as we will see in the following chapter even though economic agents are not irrational they are neither as rational as the strong version of rationality would assume. In a world of uncertainty and with highly uncertainty averse economic agents, small new news may produce large price fluctuations.

Behavioral Economics do have an important point, markets do not behave like they would of behave if the strong rationality assumed by the free market defenders and by the EMH were correct – and this is a very relevant contribution. But, the fact that the strong rationality assumption does not hold, does not mean that economic agents or group behavior is irrational. Given uncertainty, high uncertainty aversion is a superior evolutionary trait (a point we will further explain in the following chapter); and therefore we should expect large equity premiums. And given uncertainty aversion there are also quick and large reactions to small news, thus we should expect large asset price fluctuations.

The point that we would like to highlight *is that fluctuations create manias and panics; but they do not produce crises unless institutions fail in the policies they*

implement. This is particular true in big depressions. The idea that markets by themselves should maintain equilibrium has over and over proven wrong, the attack of Behavioral Economics to EMH is just one more of these instances. A more general and relevant notion is that markets do not exist ever by themselves, they are always within an Institutional Arrangement. The Institutional Arrangement might be more or less adequate for specific social or economic goals, but in general its purpose is to guarantee group survival. Survival however does not require for institutional crises not to happen. Minor financial crises are a natural consequence of the Institutional Arrangement's natural process of learning under uncertainty. A major global crisis, however, always implies serious institutional failures.

BEYOND BEHAVIORAL ECONOMICS

Behavioral Economics was built mainly as a critique of the strong rational economic man of contemporary Neoclassical Economics, particularly in its free markets version. As we argued in Chapter one such free market version is unsustainable theoretically due to the failure of Welfare Economics, General Equilibrium Theory and Rational Expectation Theory; and is indefensible in practice due to three historical events: 1) the 2008 crisis; 2) despite the free markets ideology - governments grew in the developed economies in the 20th century from 10% of GDP to 40%; 3) the failure of the Washington consensus to achieve economic growth on the economies that followed the recommended policies.

However, despite the previous failures, the fact remains that the fast economic growth in Capitalism versus previous modes of production has to be explained; and so the allocation of resources through prices in large markets. We had been arguing that the economic growth of Capitalism is to a large extent satisfactorily explained by a soft version of the rational economic man, like the one introduced by Smith; and that despite their theoretical failure, Welfare Economics and General Equilibrium Theory continue to be the best explanation that we have as to how resources are allocated in large markets through the price mechanism.

The *humans* of Behavioral Economics are defined as non rational, altruistic and social cooperative individuals. But *humans* defined this way cannot explain several empirical realities such as. 1) Why individuals do behave selfish in large markets, despite the fact that they display altruistic and cooperative behavior in laboratory settings or small groups - even in monetary transactions. 2) Why individuals can display altruistic and cooperative social behavior in some cases, like the dictator's game in laboratory setting or the high social expenditures in developed economies; and not do so in other cases, like the extreme low international aid (which is nothing else than a global Dictator's Game in real life). 3) Why in some cases individuals can display very aggressive behavior, particularly to "other" individuals not belonging to the *in-group* to which the individual belongs. 4) Why the companies with more global success are the ones which introduce new options to the customer and new ways to process

information in a more rational way. 5) Why despite the presumed individual non rationality markets work so well both to allocate resources and to promote economic growth. To explain these realities, we need to go beyond Behavioral Economics.

Behavioral Economics points out the need to integrate economics with other social sciences like psychology and sociology and argues that we are *humans* and not *econs*; and that we will better understand economic behavior by focusing in *humans* in instead of *econs*. But Behavioral Economics has a methodological problem that does not allow it to explain the empirical facts described in the previous paragraph. Just like the free market ideology that it criticizes, Behavioral Economics starts its analysis from the characteristics of the individual human nature. The whole discussion is around whether individuals are selfish or not and whether they are rational or not. But there is not a careful description of the social group, the institutions and the historical values of the culture of reference. This methodology to describe social dynamics starting with the individual characteristics is limited to three schools in economics: The free market ideology of contemporary Neoclassical Economics, Behavioral Economics and Sen's economics. Even the contemporary Keynesian Neoclassical School, that did not defend the free market ideology – like Samuelson, Solow and many others, only used the characteristics of the individual to conceptualize the functioning of large economic markets; but, clearly understood and accepted that economic dynamics went beyond the markets and that government intervention was required. All the other New Schools of economic thought, mentioned in chapter one, understood and emphasized the need of institutions in the determination both of the economic equilibrium and the economic growth path.

Focusing on the individual to explain social dynamics and economic relations is the wrong methodological approach, which for the free market defenders ended up in their proposals that economic markets can almost do it all. Behavioral Economics rebels against this conclusion, but by maintaining the same methodological approach it ended up with the conclusion that *humans* display altruistic and cooperative behavior even in monetary transactions; but could not explain why in some cases they do and in others they do not. And it could not explain in which cases individual selfishness is welcome and in which it is not. And it could not understand the relationship between the individual selfish behavior in large markets, the efficient allocation of resources and the Capitalism's faster economic growth. Social dynamics goes well beyond economics,

and we do need to integrate other social sciences, but we should not and cannot do it using only the methodology of analyzing the characteristics of the individuals; because social dynamics goes, as we will see, well beyond the individuals.

Introducing psychology, allowed Behavioral Economics to describe a non rational individual incapable to know in many occasions what are his true economic preferences. But then, how do markets work so well to allocate resources and governments do so poorly? Why the USSR failed and the Western economies succeeded? These questions cannot be answered with Behavioral Economics. We need to go beyond.

A critical empirical Study is the Robbers Cave experiment made by Sherif and Harvey, described previously already. The results on this key study cannot be explained neither with Behavioral Economics nor with its extension into identity economics. Individuals were socially cooperative, but only within the *in-group*, and they became selfish and aggressive to the individuals belonging to the *out-group*. Thus, individuals are neither altruistic and cooperative nor selfish and aggressive – they behave different in distinct situations. And to understand these results, it is not enough to internalize in the individuals utility function the social norms as identity economics do. Because, if the individuals had internalized the humanistic values of their large society, they would not had become so aggressive to the other students group, which after all in reality were part of the same large society to which they belonged. What the study basically showed, is that there are not very relevant individual preferences, that they can be changed with the influence of the group, actually in a record time of less than a week.

Sherif and Harvey were trying to show precisely that, as Gestalt Psychology had argued before, group behavior emerges which is distinct to the sum of the separate behavior of the individuals involved. They were successful. The new values of the *in-group* became to be very aggressive towards the *out-group* to the point that the experiment had to be interrupted. This happened, despite the fact that all the students belonged to the same large society, and therefore none of the individuals isolated would of by himself had behaved so aggressively. The group behavior that emerged was different than the sum of the behavior of the isolated individuals that constituted the group.

To understand why the group is so decisive in defining the individuals behavior, and to explain the five empirical realities mentioned above, we have to go beyond Behavioral Economics into a deeper integration of

economics with other sciences. This is the purpose of this chapter. We will follow an evolutionary approach, and it may seem at times to the reader that we are digressing from the main topic. But, please hold on. At the end, we will show how this approach: 1) allow us to understand the primacy of the group over the individual; 2) explains the five empirical realities mentioned above; and 2) permits the understanding of the contributions and limitations of the diverse schools of economic thought.

EXISTENCE: SYNCHRONY AND DIACHRONY

There is a universal synchrony¹⁵⁶. A harmonious universe that follows physical laws. One in which everything that exists is related to everything else. In physics, both Newtonian gravity and General Relativity express formally this synchrony. As I am sitting in here, writing this book, I am connected to the whole universe and its physical laws. If it was not for gravity, I could not remain here where I am. And since I am made of organs with tissue and cells made of atoms. It means that my existence links from the smallest particle in an atom to the whole universe of existence. But at the same time each existent particular has its own diachrony – giving by its own arrow of time. The universe of energy is permanent –it always exists, but existent particulars happen to appear and disappear. Whether it is the material universe, earth, live or each one of us, particulars have its own dyachrony. I was born and I will die.

The universe follows physical laws and can be understood in its synchronicity either with causality (classical physics) or probabilistic (quantum physics) methodologies. But there are no laws that can explain the diachronic existence of a particular. We know for example that stars do collapse into black holes and understand the physics as to how it happens, but we cannot forecast which star will collapse. Thus, the universe that looks synchronic from the point of view of the relations between all of the particulars, is diachronic from the point of view of each particular.

Humans are the only living animal, that as Heidegger emphasized, is aware of his own diachronic arrow of time – we are the only ones which abstract thought allows for the understanding of an extended time. So we are the only existent particular that is anxious about its possible disappearance. This particular anxiety of man is mitigated to a large extent

¹⁵⁶ Please see, Obregón, 2014b.

due to his belonging to a social group. The social group and its institutions provide the individual man with a more forecastable known environment. That is why any fear that the institutions of the group will not work, translate into a profound sense of mistrust of the future, this is what is behind Keynes and Knight definition of uncertainty as to the unknown future. If the institutions behave normal as always, the past and the present knowledge are good indications of the future, the economy is near equilibrium and risk can be calculated in a probabilistic manner. However, when institutions seem unable to do their normal tasks, the individuals' confidence in the system goes down abruptly and the future becomes unknown.

ADAPTATION AND EVOLUTION

The universe is defined by energy which transforms itself in matter, life is just one expression of matter. The material universe in its actual form is much older than life, fourteen billion years versus less than four. Life is an accident of matter; the DNA, that characterizes life, is but a minor chemical alteration of the RNA, that defines matter. The material universe is expanding an ever changing. Particulars appear and disappear. The existence of life is not guarantee; life may disappear in the future and nothing will happen to the material universe. Nor only life is significantly younger than the material universe, but it is also insignificant in relation to the size of the material universe. Life disappearance may be caused by small, today unknown, future small change in the material universe. Life disappearance would not be a significant event in the existence of the material universe.

Since the material universe and earth are changing, to survive life has to adapt to such changes. And since the future changes are unknown, life must diversify as much as possible its genetic pool. More diversification means better survival chances. This diversification happens both, by diversifying the species, and by diversifying the genetic pool in each specie, by given different individuals distinct genetic pools¹⁵⁷. Adaptation

¹⁵⁷ The two main themes of evolution are natural selection and random genetic drift. Individual genetic variance (due to random mutation, recombination - sexed reproduction or migration - gene flow), sexual reproduction, inheritance and natural selection allow the adaptation of the species to environmental changes. Random genetic drift allows the random genetic variability of the species, regardless of environmental changes. These two processes operate concomitantly.

and evolution mean that, once there is a significant change in the material universe, some species will disappear, like the dinosaurs, and others will survive. Of those species that survive, some individuals will disappear and others will not. The individuals that survive are those better fit genetically to the new material world brought about by the material changes previously referred. But those individuals surviving the material changes, will have to die eventually. Because, they have to inherit their superior genetic pool (only superior in relationship to the particular specific new material world), in order for new generations to be better adapt and to increase the survival chances of the whole specie. We are individuals, and we are born and we die, because that optimize the human specie chances of survival.

OUR EVOLUTIONARY SELF

At one point in time, likely seven million years ago, we had a common ancestor with the Chimpanzee. An accident taught us to use the sharp edges of a broken rock for productive reasons; and as the rock technology progressed it produced an economic surplus, that allowed to feed larger social groups. Both the new rock technology, and the more intense social life, produced evolutionary changes that finally ended up with the Homo Sapiens. The brain grew in size; technology became more advanced; social life in larger groups; more sophisticated language; we learn to read other people minds and to express and control our emotions; a more erected body position that free the hands for productive purposes and permitted a larger phonetic capacity. Chimpanzees can learn in the laboratory the rock technology belonging to 3.5 billion years ago, but they cannot learn the one of 2.4 billion years ago¹⁵⁸. Thus, somewhere in this period we became significantly different.

The point to emphasize is that man in evolutionary terms already comes from an ancestor that lived in groups. And that the evolutionary changes that ended up with the Homo Sapiens were concomitant with a larger group and a more intense social life. If anything distinguishes us from the animals is our syntactic language, which is due to more intense social life. To be human meant from the beginning to live in a group. Individual's survival depends upon his belongings' to a group.

¹⁵⁸ Obregón 2014b

Thus, we have two key evolutionary characteristics: we are individuals, genetically differentiated from others, who born and die; and we belong to a social group. In order to maximize our survival chances, evolution gave us two instincts: selfishness and belonging. Selfishness, to guarantee that each individual looks up to his own survival. Belonging to guarantee that the individual is related to a group, because that increases his survival chances. And because group and species survival is evolutionarily more relevant than the specific survival of any individual; the belonging instinct was evolutionarily designed to guide and redefine the selfishness instinct.

GROUP FORMATION- OUR BELONGING SELF

Our belonging instinct has been carefully documented by the Psychology of Attachment¹⁵⁹. Psychological and neurobiological studies done in more than twenty countries have shown that we are born with a belonging instinct. Infants recognize their mother voice immediately after they are born. They can imitate an adult face 40 minutes after being born. The child's brain takes years to develop, and thus requires the mother attention and care. The relationship with the mother or care giver during the first twelve months defines in most cases the adult's personality. In extreme cases even the neurobiological development of the child's brain is at risk. We are social animals; whose survival requires the social group.

The belonging relation with the mother or care giver the first twelve months is emotional. The mother teaches the child not to be aggressive and socializes him; among other things she teaches the child to speak. Language, careful teaching from the mother, and the maturity of the child's brain develops the child's capacity to reason; thus, the belonging relation becomes also based on reason.

The belonging relation is not only social, but also chemical. When we share time with others we love we produce dopamine and oxytocin, drugs that eliminate stress and foster a better functioning of our defense mechanism. Loneliness, or being subject to social abuse, produces cortisol, which in extreme cases destroys our cells and neurons.

Thus, belonging to a group is the most human characteristic that we have, we actually became *humans* due to the enlargement of the social group. Now, evolution, according to our brain size, prepare us to live in groups of

¹⁵⁹ See Obregón 2009, 2013a y 2017.

around one hundred participants¹⁶⁰. In groups of this size our emotional and chemical belonging works properly. However, as technology developed, the economic surplus grew and fostered the enlargement of the group significantly above its originally designated evolutionary size. As a consequence, emotional and chemical belonging were not longer possible. Therefore, social belonging became more and more a conceptual – rational - relation.

Belonging is always both an emotional and a rational relation, because the brain is only one. However, there is a spectrum. With those more near to us with whom we have the possibility to look mutually at each other eyes, to eat together and eventually to touch each other, the relationship is more emotional. With those with whom we cannot, the relationship is more conceptual and rational. To distinguish them, I have called the first type Love and the second one Social Significance – because the individual gets meaning – significance through social belonging.

In Addition to Love and Social Significance, the individual also has an instinctive belonging relationship with the biological and material universe, also needed for survival – which I have called Existential Significance. That is why we get amuse and relax when we: listen to the wind or to the ocean waves or to a bird singing; look at a beautiful valley or a dolphin swimming in the ocean; contemplate the moon or the sun or the stars; and so many other ways. Existential Significance is expressed in many forms of religious and spiritual life, which in many societies is also a social event that strengthens the relation of the individual with the society.

In primary societies, Love and Social Significance were/are both with the social group; and Existential Significance is also largely obtained through the social group. In traditional societies, love was/is mainly with the extended family, and Social Significance with the social group; Existential Significance may or not be obtained through the social group. In contemporary Western societies, Love is mainly with the unicellular family and Social Significance is with the social group¹⁶¹. Existential Sig-

¹⁶⁰ Obregón 2014b

¹⁶¹ The primary, the traditional and the Western societies are abstract categories of analysis used in previous works. They are defined as follows. Primary society: the individual is not differentiated from the society. The society, in turn, is not differentiated from the existential universe. Traditional society: the individual is differentiated from society in terms of his responsibilities, but not in terms of his rights. The society may or may not be differentiated from existential universe. Western society: the individual is differentiated, in addition to his responsibilities, by his rights. The individual exercise his rights of: expression; political participation and voting freedom; economic freedom and property; and to pursue his individual economic interests. The society is differentiated from the existential universe.

nificance, through Protestantism, has become related to working for the well being of the social group. Since, we are evolutionarily prepared for having an emotional and chemical belonging tie, Love is central for and adequate individual belonging; that is why the disappearance of the unicellular family in Western societies is a serious threat to the psychological stability of the individual.

Moreover, in contemporary Western societies the individual is fully differentiated and for the first time becomes responsible of his belonging relationships through the three routes. Love – who to marry for example - in primary and traditional societies was decided by the group or the extended family. And Social Significance was automatically obtained because by being born in such a society the individual had already a well defined social role; whether it was to be a fisherman or a carpenter or a king. And Social Existence was obtained from the group or was quite accessible. In Western contemporary societies, love – who to marry – is decided by the individual, his Social Significance is obtained by merits which given the predominant role of the Economic and Exchange System in most cases require nor only social success but also monetary success (although inheriting name and money still helps a lot), and he is also responsible of his Existential Significance – he can decide whether be a religious man or not. This new freedom present great opportunities for the individual, but has the disadvantage that when he fails, he is left with no belonging relationship to recur to. That is why: while Freudian neurosis was the most common mental illness in traditional societies, because they refrained the natural satisfaction of selfish instincts; in the contemporary Western societies, the most common mental problem is personality disorders, due to social isolation.

What we would like to point out in here is: that the individual needs the group, nor only for his economic survival, but also for his psychological well being. Extreme cases of loneliness produce uncontrolled aggressiveness or auto- destruction. Monkeys that are grown isolated mutilate themselves, and are never any longer capable to establish social relations with other monkeys. Drug abuse is in fact one way to compensate for the lack of dopamine and oxytocin, consequence of inadequate emotional belongings in our contemporary societies¹⁶².

We already have in here an initial explanation of why social expenditures over GDP in Western countries are between 20 and 30%, but international financial aid over world's GDP is only 0.2%. Individuals belong to a given country, but not to a world community.

¹⁶² Obregón 2009.

OUR SELFISH SELF

Freud wrote that we had two critical instincts sex (life) and aggression (death). Lorenz in his book *On Aggression* identifies four fundamental instincts: hunger, reproduction, fear and aggression. Aggression in the animal kingdom serves specific survival needs, such as: dividing the territory, insure that the stronger one receives social advantages, and establish basis for hierarchy and leadership. Our Selfish self is needed to optimize individual survival. It has been shown that new babies are born aggressive and that is the mother the one that teaches them not to be aggressive¹⁶³. The selfish instinct cohabitates with the belonging instinct both in animals and in *humans*. Lorenz, and others after him, have shown that several animals follow the first being that they see when they are born – they attach. And attachment (belonging) together with aggression orders the social animal world. Think, for example, in the male lion defending the territory and the group and in the female taking care of reproduction, feeding and belonging. Belonging in *humans* has evolve in a complex social life, which suppress to a large extent aggression within the *in-group*, between *us*. Although, aggression continues defining to a large extent the social order between *out-groups*, between *them* and *us*. This hindsight's already an explanation of the results in the Robbers Cave Experiment.

Since, from the evolutionary survival point of view the group is more relevant than the individual, the belonging instinct always guides and redirects our selfish instinct. But, our aggressive self is always there, and failures on family or social belonging bring it to the forefront.

Freud read Darwin, and saw the catholic society of his time as a repressor of the basic instincts of sex and aggression, which for him was the main cause of neurosis¹⁶⁴. And to a large extent he was right. But, what he did not anticipate properly was the importance of the belonging instinct, which was the main concern of Bowlby. Belonging establish the instinctual link that guarantees that the individual will socialize, therefore belonging guides and redirects the selfish instinct. And the socialization process implies a development of the *Ego* (which Freud also underestimates), which learns to mediate between the ID and the external social pressures of the *Super Ego*. But when belonging fails, the sexual aggressive intelligent individual, which the human being is, becomes a first class predator. In this, Freud was right.

The great contribution of Smith is that he understood that England

¹⁶³ Obregón 2009.

¹⁶⁴ Obregón 2015a.

by institutionalizing economic freedom in large markets had liberated the selfish instinct of man in such a way that, in instead of producing social damage, it would produce social well being. Thus, economic markets presented a solution for Smith's previous work in *Ethics*. Markets allow for individual selfishness to become an ethical conduct. But remember, that according to the Theory of Moral Sentiments, it is only so, if both in the eyes of the society and in those of the individual, the activity in the markets can be proven that does not damage the society.

Now, we must be very careful not to confuse our selfish instinct with the selfishness of the economic man in large markets. The selfish instinct is an evolutionary characteristic of man which is a constant in all societies, but in many of them social belonging did not allow for any social expression of this individual selfish instinct, at least for the majority of the individuals. It is the particular case of modern Western societies that the expression of the selfish instinct is allowed, to most of the individuals, through the large markets¹⁶⁵. Therefore, the selfish economic man, as we had been argued all along this manuscript, is an institutional characteristic of a specific society.

LEARNING FROM THE OUT-THERE

As Kant anticipated us, we never really get to know the out-there. We encounter reality through our senses, and the beats and pieces received through them are put together by our brain as images. These images are decomposed and store, and when needed they are recall. In fact, our imagination is nothing else than recombining the images that we had stored previously. This process, up to here, is identical to the one that evolved mammals follow to get to know the out-there. The only distinction is that we have a syntactic language, one in which the meaning of each word is contextual. Our more sophisticated language allows for more combinatory possibilities of images; thus, as far as we know, we are the only animal with an extended notion of time. We are the only one aware that will die in a defined range of future time¹⁶⁶.

Since we cannot get to know the out-there by any other method, that science recognizes, it means that scientifically speaking man is unable to have access to universal ethical values, whether they represent a full blown ethical

¹⁶⁵ Poverty may not allow some individuals to express their selfish interest through the market.

¹⁶⁶ Obregón 2014b.

system of just partial orderings as Sen affirms. Therefore, altruism and social collaboration have to come either from natural sentiments or from social learning. Since evolutionarily we know that the instinct of belonging relates only to a small group with which we have visual and other contacts. It follows that we do not have universal moral sentiments. And since there is not an established international society. It is easy to understand why international aid is so low.

THE CONCEPTUAL SYSTEM AND THE INSTITUTIONAL ARRANGEMENT

What is an institution? In other works, I have defined an institution as the sum of the Conceptual System and its corresponding Institutional Arrangement¹⁶⁷. The definition sounds somewhat tautological, but it is not. It is meant to indicate that the actual physical institution that we see in a society actually always have a corresponding Conceptual System attach. Think for example in the institution of the parliament in England, it has its members, they are elected and they discuss in a specific building and so forth – but they also represent a Conceptual System –i.e. the constitution, the laws and so on. The Conceptual System is defined as a mixture of knowledge, beliefs and habits that comprehensively explains social and physical reality, which guides and directs social and individual behavior. An Institutional Arrangement is the set of institutions that make the Conceptual System operable.

The Conceptual System has a specific historical culture in a given society and so does its corresponding Institutional Arrangement. Therefore, social decisions nor only correspond to today's democratic choices but also to the historical institutions. Whether we talk about representative democracy or participative democracy through direct voting; democracy always operates in a given Institutional Arrangement and its corresponding Conceptual System, which do change through democratic decisions, but slowly.

THE THREE SOCIAL SYSTEMS

The basic social system of any society is the Integrative System. The Integrative System consists in the traditions and customs; socially estab-

¹⁶⁷ Obregón 2008b.

lished obligations - established norms, the law; values, and social beliefs in general; ethical principles; the religion; benevolence, and commitments acquired individually but socially sanctioned. This system holds society together, and it is the base that defines the main relationship between the individual and the society. The Power System refers to the use of public force. The use of force is usually only allowed to the state; individuals are forbidden to use any sort of force against other individuals of the same *in-group*, although they may be allowed to use it against other members of the society which are conceived like *out-group* members, i.e. slaves. The Power System usually governs, to a large extent, the relationship between groups. The Economic and Exchange System is the production and distribution of economic goods, and the selfish relations of exchange in general, including economic exchange.

In the primary society the Integrative System and the Power Systems are more relevant, but as societies evolved the Economic and Exchange System gains importance until it gets to the Western society in which it is a rival of the Integrative System as to define the main relationship between the individual and the society.

SOCIAL CHANGE

Kenneth E Boulding use to say that the main problem of the social sciences was the relationship between the individual and the society. Table 4.1 presents the main elements of such relation. Individuality is defined by the specific individual genetics which combined with survival instincts gives rise to our individual self. Self preservation is closely watch by our selfish survival instinct. But since individual survival requires the group, the individual also has a belonging instinct, to the people very near to him - Love; to the society - Social Significance; and the biological and material universe - Existential Significance. The social significance is expressed through the three social systems: The Integrative System, The Power System, and the Economic and Exchange System. Society is defined by its Conceptual System and its corresponding Institutional Arrangement.

There are many theories of social change. We shall mention four of them. The classics Stationary State, Marx's, Veblen's and North's.

At the bottom of the table we find the Economic and Exchange System, which for Marx explained social and institutional change. For

him the changes in the relationship of man with the material universe define the changes in the social universe. For him history is a teleological process which at the end will bring about the humanitarian communist society, in which the human needs of the individual will be satisfied. Veblen agreed with Marx in many ways, but he points out that the social institutions created by the previous technological process will enter in conflict with the new institutions consequence of the new – most recent – technological process. And that, the result of this conflict varies from society to society and it is distinct in diverse historical times-therefore it is not, as in Marx a teleological process. According to him we can study the historical past, and he did, but we cannot forecast the future.

In North, social change happens in any of the categories in the table except those defining individuality, which may change genetically but is a much slower process than the rest. For him individual creativity nor only changes the technological process of production, but also the social process by which individuals interact. There is a permanent questioning and redefining of the Conceptual System and its corresponding Institutional Arrangement, which in turn modifies the three belonging relationships. And since it modifies Social Significance, it also changes the three social systems. But change can start at any of the instances of the table, individual creativity may modify the Integrative System which then will have repercussions in the other two systems, in the Social Significance and in the Conceptual System and its corresponding Institutional Arrangement. North point is that social creativity occurs at any social instance, and nor only in the technological process of economic production.

TABLE 4.1 RELATIONSHIP: INDIVIDUAL – SOCIETY

Individuality		Belonging	Institution	
Individual genetics	Individual	Love	Society	Conceptual System
Survival instincts		Social Significance		Institutional Arrangement
		Existential Significance		
		Social Significance:		
		Integrative System		
		Power System		
		Economic and Exchange System		

North, however warn us as Veblen did that old institutions are resilient and difficult to change. This is how he explains why exporting Western institutions to developing countries has been so difficult and unsuccessful.

Finally, the classical economics stationary state argued that as the population grows less productive land is used, therefore the cost of producing food goes up, the salaries go up, rent of the land goes up (because its defined by the less productive land) and profits go to zero. Different economists design distinct ways to escape the stationary state fatality; Malthus recommended policies to maintain population growth under control (which are still critical for many developing economies), Ricardo recommended importing food (which is also useful for developing economies). But the true way out of the stationary state is technological development. Technology in food production and in other goods increases productivity and allow for both salaries and profits to go up. That is why technology was for Smith so crucial in his thinking. And What does technology depend on? Mainly on mass production allowed by the enlargement of the markets. The positive cycle of economic development implied in the West is as follows: 1) international trade increased due to both, gold from the Americas and species from the east; international trade meant already access to cheaper imported food. 2) countries that were not involved neither in gold or species had to developed mass production. 3) which implied that the Burgos-cities grew; and this, by the way, was the best possible policy to reduce population growth, because having children in cities became more expensive and difficult. 4) as cities grew the middle class grows, democracy comes along and the consumption of the middle class provides a new substantial and decisive enlargement of the markets. In all this process the enlargement of the markets allowed for the mass production, which fostered technological development both in food production as well as in other goods. Smith's main contribution is to have understood the relationship between large markets and technological development.

There are only two groups of countries that had developed, a group of Western countries and a group of Asian countries. We already explained how the first group developed, the second group development have been due to what I have been calling The Asian Development Model¹⁶⁸. This model is dependent upon the West, because it maintains its technological development at the world's frontier by heavily exporting at the middle class of the Western countries. But it has special features of its own. 1) It has a very high internal saving rate, which reduces the dependence on foreign

¹⁶⁸ Obregón 2018b.

capital, allows for a stable undervalue exchange rate and provides enough resources for investing in local companies that may become worldwide export leaders; 2) It has an industrial policy aim at: a) integrating other companies as providers to the exporting companies, b) reduce imports, through the undervalue exchange rate, and using import substitution policies, among which there are all sort of administrative tricks – fostering the growth of local companies in the local market, c) promote the development of local productive chains of economic value added, like the construction sector – which is also possible because the high internal savings. The huge internal savings and the appropriate industrial policy has made it possible for a group of Asian countries to become developed economies.

But we must emphasize that a critical key feature of the Asian Development Model is that it exports to the West and maintains first class global technology. Why is this so crucial? Because if a country develops with obsolete technology whenever it opens up its industries are not competitive and they just disappear as the consequence of the confrontation with a superior technology. This explains why, for example: 1) East Germany became so small after joining West Germany, and 2) Russia collapsed when it opened up to the West¹⁶⁹.

The two critical points to understand about social change are. 1) that although it occurs as North argues at any place in the social system, its main determinant is technological development, and 2) that by its very nature social change is slow, particularly due to the opposition of the old institutions. Once we understand that institutions are not only physical arrangements of actual institutions, but also the Conceptual Systems that they represent, we can see why social change is so difficult, values and concepts remain attach to societies for centuries. The Western Capitalism and the Asian Capitalism had been exceptions, and even in them social change is slower than may seem. In some other regions like the Arab countries, South Asia, and large parts of Africa and India the Conceptual Systems have prevailed and social change has been very slow.

Social change is the consequence of old institutions, technological development and individual creativity all through the social system. Notice that democracy and individual voting is only one of the components in all of this process. Can we change our social world, in any desired direction? Yes. But at a slower pace that we may wish. Democratic choices have to cope with the fast social change produced by technological development which has a dynamic of its own, and are embedded in old institutions –

¹⁶⁹ Obregón 2018b.

many of which clearly delimit how far democratic choices can go. Our societies are the reflection of their own history strongly embedded in values and institutions that necessarily constrain today's social democratic choices.

SOCIAL CONFLICT

A society's life is defined by its Conceptual System and the corresponding Institutional Arrangement that reflect its own cultural history. This Conceptual System defines the three belonging routes: Love; Social Significance; and Existential Significance. And Social Significance is expressed in the three social systems: The Integrative System, The Power System and the Economic and Exchange System. In the Integrative System reside the values and Institutional Arrangements that hold together the society, it is the fundamental system of society. Love and Existential belonging are usually key components in social bonding, and thus to a large extent they are also part of the Integrative System, but they have a life of their own. The family, for example, performs a critical function in social bonding, but it also has expressions of its own. Religious beliefs are also key for social bonding, but they may also have a sphere of their own – think in private meditations or in isolated monks.

If the three belonging routes are satisfied the individual selfish instinct is guided and redirect to an adequate social life. However, if there are belonging failures in Love – family ties, in Social Significance – social roles, or in Existential significance – perceived sinful status; the individual becomes isolated and, dominated by his selfish instincts, it becomes aggressive and destructive not only of others but even of himself. Thus, there is a very fine equilibrium between belonging and selfishness, which normally works well, but in occasions may go wrong and social conflict is produced. Social conflict is produced once the Integrative System is broken – or do not exists – and there is reason to distinguish between *Us* or *I* and *Them*. Isolated killers shooting at masses are usually the outcome of severe belonging failures (often associated with genetic problems), which end up in a sharp distinction between *I* and *Them*.

The Power System in most societies is not allowed between individual members – unless some of the members are *Them*, like slaves. The Power System, the use of force is reserved to the state or its representatives; and it is only a complement to the Integrative System to preserve social order.

No society could be established only by the use of force, the main component of social bonding is the values of the Integrative System that are educated in the child by the mother, it is this socialization process the one which produce a social individual that only in occasions has to be control by force. Huge social repressions occur mainly, when the state is unable to allow the individuals to obtain the basic things needed to satisfy their surviving individual needs; such cases, often end up with mass rebellion, and often with the substitution of the state. In addition to its subsidiary role of helping the Integrative System to maintain social order, the key function of the Power System is to defend/expand the interest of the *in-group* in relationship to the *out-groups*. This explains not only the Robbers Cave and the Stanford Prison experiments, but also why military conflicts had happened so often in human history. And why, even today, global military expenditures are eleven times higher than the value of international aid.

The Economic and Exchange System is in most societies, to a large extent, subsidiary of the Integrative System – which defines both who does what and who gets what; it is not until the Western contemporary societies, that it gets a critical role in the social production and distribution of resources and goods. Economic freedom is one of the key components of the rapid economic growth of Capitalism. As we have been explaining the enlargement of the markets due to the expansion of the middle class is the main engine of technological development. But economic freedom is not a natural human right, it is an institutional development of a particular group of Western societies. Economic freedom is allowed by the Integrative System of these societies. One of the great discoveries of Smith was that large markets liberated in a positive social way the individual selfish instinct, i.e. that economic freedom promotes economic development. And therefore he convincingly argued, that economic freedom should be allowed by the Integrative System.

The Economic and Exchange System has acquired a dynamic of its own, and it is today critical to understand social change. And despite its virtues, however, it does produce social problems. The Economic and Exchange System is not an Integrative System - individual relations are basically competitive. In developed economies, The Economic and Exchange System's success has been companion with a rapid expansion of the Integrative System – the participation of the governments in the economy has grown very fast. But the Economic and Exchange System tends to globalize itself rapidly; and it has not been followed by the expansion of the global Integrative System. The consequence has been a rapid deterioration of the

income distribution between countries that belong to the global process of production and countries that do not. While it is true that the global income distribution between countries have been improving in the last years, it only does so because of China and India which do participate in the global process of production due to the TIC revolution. If we exclude these countries the income distribution between countries have been deteriorating.

Numbers are very clear as to the irrelevance of the Integrative System at the global level. International aid over global GDP is only 0.2% (compared with 25% social expenditures as percentage of GDP in developed economies). While the global Economic and Exchange System is large, global trade over global GDP is 52.3% (which means that international aid over global trade is only 0.4%). Since the global Economic and Exchange System is not supported by a global Integrative System, it has to be based in a strong Power System and it is, global military expenditures as percentage of global GDP are 2.2% (or 4.3% of global trade)¹⁷⁰.

Since the main characteristic of the Economic and Exchange System is that it is competitive and based upon the individual's selfish instinct, it does not have any component of belonging. In developed economies the growth of the Economic and Exchange System has been companion, as we said, by a rapid expansion of the Integrative System and this has mitigated the potential psychological damage of the individual isolation that the Economic and Exchange System produces. However, the Integrative System has been contaminated by the Economic and Exchange System, social status is more and more related to economic success; and the problem is that the individual may fail in obtaining the desired socio-economic status. Moreover, the need of individual displacement for economic productive purposes has produced a rapid disappearance of the unicellular family: between 1960 and 2000 the divorce rate doubled, babies of unmarried parents sextupled and cohabitation without marriage increased sevenfold. The disappearance of the unicellular family is particularly trouble some because the Social Significance of the Integrative System cannot substitute efficiently the more emotional and chemical belonging that the Love of the family provides. Failures to obtain the desired socio-economic status, the disappearance of the family and the increasing weakness of the Existential Significance – which has become also an individual responsibility, have created significant socio-psychological problems. A rapid increase in psychological patients that exhibit personality disorders. Clinical depression more than tripled in the last three generations in the

¹⁷⁰ All data come from World Bank 2018, consulted in the Web in September 18, 2018.

United States. And between 1960 and 2000 the teen suicide rate tripled, crime rate quadrupled and prison population quintupled.

EMOTIONS VERSUS REASON

Emotions are inherited evolutionary traits of successful patterns or response to environmental cues. As we have said before, to survive life has to adapt to the environment; thus, even the most simple of the unicellular being has patterns of response to the environment¹⁷¹. Reptiles do not have emotions as such, but they do have inherited patterns of response to the environment which manifest themselves in two main kinds of survival instincts: aggression and attachment. In mammals, emotions started as the brain developed areas capable to sustain those feelings; but emotions in mammals, despite the self feelings associated, are only surviving patterns inherited from earliest and simplest forms of life. In *humans*, attachment becomes belonging, which not only has an emotional basis but also involves reason. But, the critical point to emphasize is *that emotions are our most fundamental inherit way to interact with the environment*.

Emotions actually help us to preselect what is relevant in the environment, to be store as images in the brain. What is emotionally irrelevant we simple do not store. Wherever you are standing, if it is not at home, ask yourself what do you have behind, and you will discover that you do not know. Emotionally irrelevant cues are just not storage. And actually, events that may be too emotional intense and that put at risk our psychological stability may not be store either; very young kids that have been raped, often do not remember the event (or events). Because emotions preselect what we store, they are always involve in any relationship with the out-there. We just cannot be pure rational beings.

But at the same time what distinguish us from other animals is, that due to our syntactic language, we can process more images in more combinations, and we have therefore the notion of an extended time. We are the only animal capable to visualize itself in extended time. Reason developed, as a part of a larger brain, concomitant with more social life and more sophisticated language. Reason is part of our evolutionary brain, and our brain is unique and works like a unified system. Therefore, while we cannot be purely rational, we cannot be either purely emotional.

¹⁷¹ Obregón 2014b.

Despite the fact that they may be some innate responses that are purely emotional – we dislike snakes for example, they mainly only dominate early stages of life. As the child's brain matures and the mother teaches him to talk and to control his aggressive instinct – the child uses his reason. In adult life, we do have instances in which emotions may be very intensive and may dominate us; but in most normal circumstances, actions in the human beings always involved the use of reason.

Emotions are not opposing reason; reason was built to complement emotions. They work together to optimize surviving possibilities. It does not make sense from an evolutionary point of view to conceptualize a weak rational man that does not use his reason efficiently, survival does not work that way.

Let us just take one classical conformity experiment in psychology labs. An individual is asked the length of a light line in a dark room, and it is shown that he is influenced by a professor whom he knows is in the next room, whose guess happened to be wrong (the trick is the student listens by a planned accident the professor's intentional wrong answer)¹⁷². Does it mean that system 1, which connects emotionally the student with the professor, dominates system 2? Or just simply means that an evolutionary trait is to follow the group, and since the student is not so sure, he does what is rational, follow the leader who suppose to know better. Following the group is evolutionarily the right rational decision. What goes wrong in this experiment is that evolution did not prepare us for the group to lie to us, as the professor did. Evolution could not had prepared us to misread the environmental cues, emotions and group belonging in fact augment and not diminish our capacity to read the external cues. System 1 prepares us for a better usage of system 2, system 1 is not oppose to system 2.

The strong rational economic man does not adequately picture us as *humans*, but the emotional man dominated by the system 1 of Behavioral Economics is neither a good description of the economic man. Because while emotions enter everything that human beings do and there is no action that does not involve them, they are not evolutionarily designed for us not to appreciate reality correctly – it is just the other way around they help us to improve such appreciation. A being which cannot decide what is best for him would not survive. Thus, due to very fundamental reasons, Behavioral Economics cases in which system 1 make us fail have to a reduced set.

¹⁷² There had been several versions of this study, the first ones were made by Asch in the 1950s.

There is a confusion which has to be clarified, the soft rational economic man is an abstraction related to the behavior of individuals in large markets, but it does not imply that man is rational in the sense that his emotions do not count or that he can control them. When preferences are expressed in the market they involve emotions. In fact, one of the virtues of the economic markets is that they allow for the expression of individuals' emotions. Both economic markets and democracy surge as a consequence of the demise of rationalism, understood as the philosophy that argues that everything can be understood with our reason. If reason could be used to order the social world, then the most intelligent should guide society – like in Plato – and they must decide what to do both socially and economically, they must decide who does what and who gets what – there is no need for the markets nor for democracy. In the markets the individual selfish instinct expresses itself and it is of course dominated by passions and emotions, which does not imply that the reason is nor also involved.

The strong rational economic man of the contemporary Neoclassical School is a rational calculator that in some ways represents a comeback of Rationalism. Because reason in each individual imposes itself upon emotions and orders the individual preferences with such clarity that they can be aggregated and provide a new form of rationality to the whole social economic system. In this view, particularly in the case of the market defendants of the contemporary Monetarist-Rational Expectations Neoclassical School, markets establish a unique, maximum welfare, stable equilibrium, and maintain economies near full employment. Thus, individual rationality provides order to the economic world. Furthermore, since non-economic motives are introduced in the individual's utility function, markets not only organize the production and distribution of economic goods but also solve other non-economic problems like for example social discrimination. This view of the markets, as we had been showing since the first chapter, *was unsuccessful*. Thus, we can not give order to the social economic world only by assuming individual rationality; we need institutions, values, history and so on.

The strong rational economic man does imply a form of rationalism that does not correspond to our evolutionary traits in which emotions are crucial. But, refusing the characterization of man of the strong rational economic man does not mean that we have to move into an alternative in which emotions make us fail as to the adequate appreciation of the external world. Emotions are actually a key feature for us to appreciate correctly

reality. And being emotional does not imply that reason is not being used. The soft rational economic man is fully compatible with our evolutionary traits and expresses his preferences in the market using both his emotions and his reason, and the social economic world is not ordered only by individual preferences but also by the Conceptual System and the corresponding Institutional Arrangement. *But the soft economic man does not fail in appreciating what he really wants of what is really convenient for him, at least does not fail usually - otherwise it could not be a survivor.* Thus, if he fails it has to be in particular cases, and finding these particular cases is actually the contribution of Behavioral Economics. But it must be understood that these particular cases, described by Behavioral Economics, are not the general case.

When an individual is in a market place there are four main kinds of economic transactions that occur, and in all the cases emotions may play an important role: 1) there are many products which are bought without much thinking, remember yourself in a super market. But many of those are decided this way, because their price is low and it is not reasonable to spend time researching on them – the search cost is too high related to the price. But the buyer is conscious of what he is doing. And what is good for him is not to incur in the search cost. 2) repetitive transactions in which the buyer may initially decide without much thinking, but then goes home and uses the product and decides again, after few repetitions the buyer knows what is good for him. 3) relevant unique decisions in which the buyer invests enough time and effort finding information and external advice to decide what to do. After this process the buyer knows what is good for him. 4) economic decisions in which system 1 dominates and the buyer does not know what is good for him.

Notice that due to informational, educational and knowledge insufficiencies in 1), 2) and 3) there may be market failures and the buyer may end up deciding something which is not good for him and government and non-market institutions intervention may be required. But 4) is a distinct case, it is assumed that even with education, information and adequate knowledge, system 1 dominates and a market failure occurs. While possible, 4) is not very common, and as we had been arguing many of the Nudges are really due to lack of information, education and knowledge.

Therefore, there are only few economic transactions in which system 1 dominates the scene and the individual really does not know what is good for him. Such cases do exist and it has been the contribution of Behavioral Economics to find them. And it has been shown that Behavioral Economics is useful in particular cases like individual saving decisions

and organ donations. But the point that we want to stress is: *that Behavioral Economics refers itself to a particular case, in which system 1 dominates, so that due to our emotions we do not appreciate reality in a proper way, and that is why we do not know what is best for us.*

OUR HUMAN PSYCHOLOGY

We are evolutionarily built to belong, because belonging is key to survival. Belonging guides and redirects our selfish instinct. Contrary to popular belief there is no contradiction between belonging and selfishness. Belonging does not reduce freedom, it increases it. Adequate belonging is key for a healthy individual psychology – one capable to make economic choices. Belonging failures create stress and in this intense emotional periods the areas of the brain required to reason do not work properly¹⁷³. An adequate emotional development increased the possibility of the adequate use of reason. An emotional balance person is ideally prepared to take rational decisions.

McLean for descriptive purposes have divided the human brain in three: the reptilian brain, the limbic brain and the cortical brain. As an analytical count of brain functioning McLean classification is wrong, because the brain is only one integrated system. However, it has the virtue that it emphasizes our evolutionary heritage. The reptilian brain coordinates the autonomous functioning of our body, the limbic brain the emotions and the cortical brain the reason. The freedom to choose basically consists in our ability to use properly our cortical brain. But to be able to do that, we need to be healthy and emotionally balanced. In other works, I have described the road to freedom as consisting of six steps¹⁷⁴. The first one is to satisfy our evolutionary need of free movement, which is basic to remain healthy and to maintain alert our capacity to learn from the environment. The second is to satisfy our basic selfish instincts guided by our belonging instinct. The third one is to establish adequate belonging through the three previously mentioned routes: Love, Social Significance and Existential Significance. The fourth one is an adequate emotional development. The fifth is to be conscious of our self and our belonging surroundings. And the sixth is mentalizing, which implies to look with flexibility and perspective our past

¹⁷³ Obregón 2013a.

¹⁷⁴ Obregón 2013a.

and our future alternatives. The key message is that to get to the sixth step we need to properly satisfy the first five. In other words, the rational economic man only exists, if he is healthy psychologically, and that means mainly emotional development through adequate belonging.

The notion that the individual always know what is best for him is obviously wrong, think in someone buying a shot gun to kill many others and then to suicide himself, clearly he does not know what is best for him. But, if there is psychological freedom due to good emotional balance obtained through proper belonging, the individual in most of the cases will be able to know what is good for him¹⁷⁵. He will not satisfy the conditions of the strong rational man of contemporary Neoclassical Economics, but he will clearly satisfy the ones of the soft rational economic man of Smith. He will able to express his preferences through the market.

A healthy psychological individual does not jump the gun, and he is not dominated by Kahneman's system one. He has learned to use his system two, and to use all help that he can acquire from the social group through: 1) market participants like firms selling information and analysis or giving it for free (examples: the Mayo Clinic web or the World Bank web, among many others); 2) non market participants like friends or non profit oriented organizations; and 3) the government. We live in a world of abundant information and analysis. As we had argued in the last chapter many of the examples used by Behavioral Economics involve lack of time to take the decision, non repetitive decisions, un-aid decisions and so on. But in real markets these conditions do not happen. For example, people always can ask somebody who can help them to calculate probabilities. Lack of knowledge does not mean to be dominated by system 1.

¹⁷⁵ The individual always knows what he wants, the discussion is about whether What he wants is what he needs? Behavioral Economics argues that in many cases it is not. But, needs imply a normative dimension which relate to values in the Integrative System and in the Conceptual System (there is not an absolute rational external standard that defines needs). Values which the individual learns through social belonging, which implies information, education and knowledge. If there is a failure in here, is a belonging social failure, not due to the individual's psychological characteristics, and must be corrected and social intervention is adequate by the democratic means chosen. The contribution of Behavioral Economics in these terms could be seen as the proposal that due to the individual's psychological characteristics these types of failures happened more often in certain cases that could be identified studying these psychological characteristics. But, Behavioral Economics goes beyond this, and argues that due to its psychological characteristics the individual even with knowledge, information and education, in many cases, does not know what he needs because due to system 1 he jumps to conclusions. Such cases, as we had argued, should not be very frequent, because evolutionarily our emotions are designed to help us read the external environment and not to misread it.

Emotions do not jeopardize rational decisions, they help them to be better, because they provide additional useful information and a connection with the group which can help the individual to be more rational. The only emotions that do jeopardize rational decisions are those due to belonging failures. That is why a society has to develop a proper social Integrative System that permits adequate belonging for the three routes.

That we are emotional when making decisions is an inherited evolutionary trait, but that does not mean that we are being non rational or irrational. Even buying a convertible car that we do not need and that we will use only once a month may be a very pleasant decision. To be rational does not mean not to be emotional.

Markets do not work isolated; they need a proper Institutional Arrangement. Including an adequate Integrative System. Proper social analysis has to be done also at the institutional level, and not only at the level of which are the universal characteristics of individuals. Because the only individual universal characteristics are evolutionary traits, which expression varies in function of the institutional conditions.

The weak rational individual of Behavioral Economics is dominated in many instances by his emotions and therefore is unable to understand his true preferences, and is altruistic and socially cooperative. Our criticism is not that this is not a good description of *humans*, but that any description will always be wrong. *Humans* can be under some circumstances altruistic and cooperative, in other situations they can be tuff economic competitors that show no mercy for their competitors, and in certain cases can be aggressive selfish predators that do not respect any law or social limit. In fact, the same human person may display all of these behaviors at a given time: he may be a selfish competitor in large markets – the soft rational economic man that Smith proposed, and at the same time being an altruistic social cooperative individual through the Integrative System of his *in-group*, and an aggressive predator towards others in the *out-group*. Think for example in a pilot of the USA forces dropping bombs in the *out-group*, belonging to a church given charity and displaying selfish rational behavior in large markets.

The main problem of Behavioral Economics is that it took the wrong route of criticizing the strong rational economic man abstract characteristics by describing experiments that show oppose characteristics; but by doing so, they built another abstraction of human nature which also has many shortcomings. There is not a fix human nature, there are only general evolutionary characteristics.

THE ECONOMIC MAN

The economic man – the *econ* - is not a description of our human nature. It is an abstraction of human behavior in large economic markets. The soft version of Smith is quite compatible with the evolutionary psychological characteristics of the *human* beings. Under normal social circumstances psychological individuals will be able to express their preferences through the markets. The soft rational economic man is a useful abstraction to explain the rapid growth of capitalist economies. The strong rational economic man proposes a rationality that goes beyond the evolutionary psychological characteristics of *human* beings. But, despite its inconveniences, it has been useful to build mathematical models that up to today are the best explanation of the allocation of resources through the price mechanism in large markets.

The *humans* of Behavioral Economics are not useful to explain many of the most fundamental economic phenomenon such as economic growth or the allocation of resources, in that sense it is not an abstraction that can substitute the *econs*.

The *humans* of Behavioral Economics are neither a good description of our evolutionary human characteristics. Its main problem is that methodologically it focuses only in the individual, and not in the individual relations with the social group and the environment which are the basis of the evolutionary traits of the human beings. Behavioral Economics loses sight of how institutions can influence human behavior to the point that it does not make sense to describe how *humans* are. Moreover, by losing sight of institutions, Behavioral Economics was unable to understand that in the main tradition *econs* were just an abstraction of the behavior of individuals in large markets, which no doubt is selfish and for which the experiments of Behavioral Economics are only of a secondary relevance.

Despite its limitations, Behavioral Economics has had relevant contributions, mainly pointing out some of the instances - due to the psychological characteristics of individuals - under which there can be market failures. And therefore, institutions – mainly the government - needs to provide help to the individual, for him to be able to process his choices in a rational way.

A FINAL NOTE IN NEUROECONOMICS

The main contribution of neurobiology has been to show that our genetics, while highly influential, is not necessarily decisive in defining human behavior. Our genetics do not define a unique development path, on the contrary is quite flexible and functions in accordance with the social environment. Even the adult brain, although already developed, shows significant degrees of plasticity. The study of the interaction between genetics and environment, has taught us: that a proper genetically development only happens if the social environment is adequate¹⁷⁶. We were evolutionarily design to be social beings and our genetics assumes that we will have in our development proper social and environmental conditions.

Several experiments have shown that our genetics does not evolve adequately under the wrong environmental and social conditions. New born kitties, if they are intentional blinded since they are born; even after they are release from the experiment, never developed the visual area in the brain. Human kids heavily mistreated, developed a smaller brain than normal. Monkeys growing in isolation mutilate themselves. Several neurobiological experiments have shown that proper brain development require emotional eye contact with other human beings; we learn to express our own emotions as a reflection of our emotional interaction with others. Thus, *we are only the way we are because we are social beings*. This reinforces the view that we have been defending, that there is not a uniquely genetically define human nature, we are plastic beings. Genetics do not define a unique pattern of behavior. A genetically deficient monkey which is born with abnormal highly aggressive tendencies, when educated by a proven warm mother learns to control his aggression. Which shows, as we have been argued, the importance of the proper belonging institutional environment¹⁷⁷.

Neuroeconomics is a booming discipline that has had already significant contributions¹⁷⁸. There are two branches in neuroeconomics. The first one uses the abstraction of the *econs* to solve traditional neurobiological problems. The second gives neurobiological support to the empirical findings presented by Behavioral Economics. The results in the first branch shows that we were evolutionarily made to optimize our relation

¹⁷⁶ Obregón 2013a.

¹⁷⁷ For references to all the experiments mentioned in this paragraph, see Obregón 2013a.

¹⁷⁸ See Reuter and Montag, 2016; and Glimcher and Ferh, 2014.

with the environment, there is no room in evolution for designs of beings which do not optimize survival. That is why even the adult brain remains with a high degree of plasticity. The second branch reinforces the findings in Behavioral Economics in the sense that when an emotional, altruistic or social cooperative behavior happens in fact the areas of the brain that theoretically should be involved in such tasks do participate. But such neurobiological support has also been found for other schools such as the Psychology of Attachment, Freudian Psychology, Budist Psychology, Language Psychology and so on. We defend the need to open the scope of neuroeconomics to include all this other relevant neurobiological results, to foster an integrated view.

BIBLIOGRAPHY

- Abadie, A., Sebastien, G. (2004). "The Impact of Presumed Consent Legislation on Cadaveric Organ Donation: A Cross Country Study". NBER working paper no. W10604, July. <http://ssrn.com/abstract=563048>.
- Acemoglu, D., Robinson, J. (2013) *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*, Crown Books. ISBN: 9780307719225).
- Aghion, P., Howitt, P. (1992). "A Model of Growth Through Creative Destruction", *Econometrica* 60, pp. 323-351.
- Akerlof, G.A., Shiller, R.J. (2009). *Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism*. Princeton University Press. Princeton, New jersey.
- Akerlof, G.A., Kranton, R.E. (2000). "Economics and Identity". *Quarterly Journal of Economics*. 115 (3): 715-53.
- (2005). "Identity and the Economics of Organizations". *Journal of Economic Perspectives* 19(1). 9-32.
- (2008). "Identity, Supervision, and Work Groups". *American Economic Review* 98 (2): 212-17.
- (2010). *Identity Economics. How Our Identities Shape our Work, Wages, And Well Being*. Princeton University Press. Princeton, New jersey.
- Ariely, D. (2008). *Predictably Irrational: The Hidden Forces That Shape Our Decisions*. The 2010 version. Harper Perennial, New York.
- Arnott, R., Stiglitz, J.E. (1991). "Moral Hazard and Nonmarket Institution: Dysfunctional Crowding Out or Peer Monitoring?" , *American Economic Review* 81-1, pp. 179-190.
- Arrow, K.J. (1962): "The Economic Implications of Learning by Doing" , *Review of Economic Studies* 29-3, pp. 115-173.
- Asch, S. "Opinions and Social Pressure" in *Readings About the Social Animal*. ed. Elliot Aronson, 13. New York: W.H. Freeman, 1995.
- Baddeley, M. (2017). *Behavioral economics. A Very Short Introduction*. Oxford University press. U.K.
- Becker, G.S. (1983). "A Theory of Competition among Pressure Groups for Political Influence". *Quarterly Journal of Economics*, 98(3), 371-400. DOI: 10.2307/1886017
- (1991). "The Demand for Children", in Becker, G.S.: *A Treatise on the Family*. Harvard University Press, Cambridge, chapter 5.
- Becker, G.S., Murphy, K.M., & Tamura, R. (1990). "Human Capital, Fertility, and Economic Growth". *Journal of Political Economy*, 98(5), S12-S37. DOI: 10.3386/w3414
- Benjamin, D.J., James, J.C., Strickland, A.J. (2010). "Social identity and preferences". NBER, Working Paper 13309, July.
- Bernard, V.I., Thomas, J.K. (1989). Post earnings announcement drift: delayed price response or risk premium? *Journal of Accounting Research (supplement)* 1-36.
- Benartzi, S., Thaler, R.H. (1995). "Myopic loss aversion and the Equity Premium Puzzle". *Quarterly Journal of Economics* 110, no-1: 73-92.
- Bolton, G.E., Ockenfels, A. (2006). Measuring efficiency and equity motives: a comment on "Inequality aversion, efficiency, and maximin preferences in simple distribution experiments." *American Economic Review* 96 (5): 1906-11.

- Boulding, K.E. (1957). "A New Look at Institutionalism", *American Economic Review*, papers and proceedings 47-2, pp. 1-12.
- Boulding, K.E. (1971). *The Image*, University of Michigan Press, Ann Arbor.
- Boulding, K.E. (1982). *Evolutionary Economics*, 2ª ed., Sage Publications, Beverly Hills/London.
- Brickman, P., Campbell, D. (1971). "Hedonic Relativism and Planning the Good Society" in M.H. Appleby ed. *Adaptation Level Theory: A Symposium*. Academic Press, New York.
- Cartwright, E. (2018). *Behavioral economics*. Routledge, New York.
- Chen, Y., Li, S.X. (2009). "Group Identity and Social preferences" *American Economic Review* 99 (1): 431-57.
- Coase, R.H. (1937). "The Nature of the Firm", *Economica* 4, pp. 386-405. In Stigler, G.J., y Boulding, K.E. (eds.): *Readings in Price Theory*, Richard D. Irwin, Homewood, 1952.
- Commons, J.R. (1934). *Institutional Economics: Its Place in Political economy*, University of Wisconsin Press, Madison/MacMillan, New York.
- Dahlman, C.J. (1979). "The Problem of Externality", *Journal of Law and Economics* 22, pp. 141-162.
- Dhami, S. (2016). *The Foundations of Behavioral Economics*. Oxford University Press. Oxford, UK.
- De Bondt, W.F.M., Thaler, R.H. (1985) "Does the Stock Market Overreact?" *Journal of Finance* 40, no.3: 793-805.
- De Giorgi, E.G., Legg, S. (2012). Dynamic portfolio choice and asset pricing with narrow framing and probability weighting. *Journal of Economic Dynamics and Control* 36(7): 951-72.
- Eckersley, R. (2002) "Culture, Health and Well Being". In R. Eckersley, J. Dixon, and B. Douglas (eds). *The Social Origins of Health and Well Being*. Cambridge University press. Cambridge, England.
- Eckersley, R., Dear, K. (2002) "Cultural Correlates of Youth Suicide". *Social Science and Medicine* 55, 1891-1904.
- Engenman, S.L., y Sokoloff, K.L. (1997): "Factor Endowments, Institutions, and Differential Paths of Growth Among New World Economies: A View from Economic Historians of the United States", in Haber, S. (ed.): *How Latin America Fell Behind: Essays on the Economic Histories of Brazil and México, 1800-1914*, Stanford University Press, Stanford, pp. 260-304.
- Fama, E.F. (1970): "Efficient Capital Markets: A Review of Theory and Empirical Work", *Journal of Finance* 25, June 1970.
- Fehr, E., Lorenz, G. (2007). "Do Workers Work More if Wages are High? Evidence from a Randomized Field Experiment". *American Economic Review* 97, no.1. 298-317.
- Fehr, E., Schmidt, K.M. (1999). A theory of fairness, competition and cooperation. *Quarterly Journal of Economics* 114 (3): 817-68.
- Fischbacher, U., Föllmi-Heusi, F. (2013). Lies in disguise: an experimental study on cheating. *Journal of the European Economic Association* 11(3): 523-47.
- Friedman, M. (1968): "The Role of Monetary Policy", *American Economic Review* 58, pp. 1-17.
- Froot, K., Dabora, E., (1999). How are stock prices affected by the location of trade? *Journal of Financial Economics* 53: 189-216.
- Furubotn, E.G., y Richter, R. (2003). *Institutions and Economic Theory. The Contribution of the New Institutional Economics*, University of Michigan Press, Ann Arbor.
- Gibson, R., Tanner, C., Wagner, A.F. (2013). Preferences for truthfulness: heterogeneity among and within individuals. *American Economic Review* 1038 (1): 532-48.
- Glimcher, P.W., Ferh, E. (2014). *Neuroeconomics: Decision Making And The Brain*. Elsevier. London, U.K.

- Greenwald, B., Stiglitz, J.E., (2003): *Towards a New Paradigm in Monetary Economics*. Cambridge University Press. Cambridge.
- Grossman, G.M., y Helpman, E. (1991): *Innovation and Growth in the Global Economy*. MIT Press, Cambridge.
- Hall, R.E., y Jones, C.I. (1999): "Why Do Some Countries Produce So Much More Output per Worker than Others?", *Quarterly Journal of Economics*, February 1999, pp. 83-116.
- Hirschman, A.O. (1970). *Exit, Voice and Loyalty*, Harvard University Press, Cambridge.
- Hoff, K. (1994): "The Second Theorem of the Second Best", *Journal of Public Economics* 54, pp. 223-242.
- (2000): "Beyond Rosenstein-Rodan: The Modern Theory of Coordination Problems in Development", en Pleskovic, B. (ed.): *Proceedings of the XII Annual World Bank Conference on Development Economics*, World Bank, Washington.
- Hoff, K., Priyanka, P. (2004). "Belief systems and durable inequalities: An empirical investigation of Indian caste". World Bank, Policy Research Working Paper no. 3351, June.
- Hoff, K., Stiglitz, J.E. (2002): "Modern Economic Theory and Development", en Meier, G.M., y Stiglitz, J.E. (eds.): *Frontiers of Development Economics. The Future in Perspective*, 3^a ed., World Bank/Oxford University Press, Washington, pp. 389-485.
- Jegadeesh, N., Titman, S. (1993). Returns to buying winners and selling losers: implications for stock market efficiency. *Journal of Finance* 48: 65-91.
- Kahnemann, D. (1999). the satisfaction tread mil, "Objective Happiness" in *Well-Being: The Foundations of Hedonic Psychology*. Rusell Sage, New York.
- (2011). Thinking Fast and slow. First Paperback edition 2013. Farrar, Straus and Giroux. New York.
- Kahnemann, D., Diener, E., Schwarz (eds). (1999). *Well-Being: The Foundations of Hedonic Psychology*. Rusell Sage, New York.
- Kahnemann, D., Tversky, A. (1979). "Prospect Theory: An Analysis of Decision under Risk". *Econometrica* 47:263-91.
- Kindleberger, C.P. (1977). *Manias, Panics and Crashes: A History of Financial Crisis*, Basic Books, New York.
- King, M. (2016). *The End of Alchemy*. W.W. Norton & Company, New York
- Klenow, P.J., Rodriguez-Clare, A. (1997): "The Neoclassical Revival in Growth Economics: Has Gone Too Far?", *NBER Macroeconomics Annual* 12, pp. 73-103.
- Knight, F.H. (1922a): *Risk, Uncertainty, and Profit*, Harper & Row, New York
- Kotler, P. (2016). Why Behavioral Economics Is Really Marketing Science. [Http://evonomics.com/behavioraleconomics-neglect-marketing/](http://evonomics.com/behavioraleconomics-neglect-marketing/)
- Kranton, R.E. (1996). "Reciprocal Exchange: A Self-Sustaining System", *American Economic Review* 86-4, pp. 830-851.
- Keynes, J.M. (1937a). "The General Theory of Employment", *Quarterly Journal of Economics*, February 1937.
- (1971a). *A Tract on Monetary Reform, The Collected Writings*, Macmillan, London.
- (1971b). *A Treatise on Money. The Collected Writings*, Macmillan, London.
- Lane, R.E. (2000). *The Loss of Happiness in Market Democracies*. Yale University Press. New Haven, CT.
- Lakonishok, J., Shleifer, A., Vishny, R. (1994). Contrarian investment. Extrapolation and risk. *Journal of Finance* 49: 1541-78.
- Lee, C., Shleifer, A., Thaler, R.H. (1991). "Investor Sentiment and the Closed-End Fund Puzzle". *Journal of Finance* 46 no. 1: 75-109.
- Lorenz, C. (1996). *On Agression*. Harcourt, Brace and World. New York.
- Lucas, R.E., Jr. (1988): "On the Mechanics of Economic Development", *Journal of Monetary Economics* 22-1, pp. 3-42.

- (2002): *Lectures on Economic Growth*, Harvard University Press, Cambridge/London.
- Mcdermott, R. (2009). Psychological approaches to identity, definitions, measurement and experimentation. In R. Abdelal, Y.M. Herrera, A.I. Johnson, and R. Mcdermott (eds). *Measuring Identity: A Guide for Social Sciences Research*. Cambridge University Press. Cambridge.pp345-68.
- Michaely, R., Thaler, R., Womack, K. (1995). Price reaction to dividend initiations and omissions. *Journal of Finance* 50: 573-608.
- Michalos, A. (1986). "Job Satisfaction, Marital satisfaction, and the Quality of Life" in F.M. Andrews (ed). *Research on the Quality of Life* (Ann Harbor, MI: Institute for Social Research, p.75).
- Mookherjee, D., Debraj, R. (1999): *Contractual Structure and Wealth Accumulation*, Boston University, inedited manuscript.
- Myers, D.G. (2000) *The American Paradox*. Yale University Press. New Haven, CT.
- Nordhaus, W.D. (1967): "The Optimal Rate and Direction of Technical Change", en Shell, K. (ed.): *Essays on the Theory of Optimal Economic Growth*, MIT Press, Cambridge, pp. 53-66.
- North, D.C. (1994): "Economic Performance Through Time", *American Economic Review* 84, pp. 359-368. Alfred Nobel Memorial Prize, Lecture in Economic Science.
- (2005): *Understanding the Process of Economic Change*, Princeton University Press Odean, T.
- (1998). Are investors reluctant to realize their losses? *Journal of Finance* 53: 1775-98.
- Obregon, C. (1980). "La teoría del valor de Adam Smith" in Leff, E. (Coordinator): *Teoría del valor*, Universidad Nacional Autónoma de México, Mexico, 13-63.
- (1983). *Keynes y la macroeconomía del desequilibrio* (editor & autor de dos artículos). Trillas, México.
- (1984a). *De la filosofía a la economía. Historia de la armonía social*. Trillas, México.
- (1984b). "Teoría del capital: antecedentes y perspectivas". *El Trimestre Económico*. 51 (204), México, 843-870.
- (1989). *Controversias macroeconómicas contemporáneas (un tratado sobre la macroeconomía de Keynes en la controversia contemporánea)*. Trillas, México.
- (1997). *Capitalismo hacia el tercer milenio. Una historia cultural de la evolución de las economías del mundo*. Nueva Imagen, Patria, México.
- (2008a). *Teorías del Desarrollo Económico*. PUI, México. Available in Research Gate.
- (2008b). *Institucionalismo y desarrollo*. Pensamiento Universitario Iberoamericano (PUI), México. Available in Research Gate.
- (2008c). *Globalización y subdesarrollo*. PUI, México. Available in Research Gate.
- (2009) *La soledad y el amor*. PUI, México. Available in Research Gate.
- (2011) *La crisis financiera mundial: Perspectivas para México y América Latina*. Siglo XXI, México.
- (2012) *Amar y pertenecer (para ser plenos y felices)*. Felou, México.
- (2013a). *El Camino a la libertad*. PUI, México. Available in Research Gate.
- (2013b). *México un país desarrollado*. PUI, México. Available in Research Gate.
- (2013c) *La libertad y sus consecuencias: Preconcepciones filosóficas de Occidente sobre la libertad política y económica*. PUI, México. Available in Research Gate.
- (2014a) *La ética y la justicia: Fundamentos científicos*. PUI, México. Available in Research Gate.
- (2014b) *Existence and Time: Philosophical and Scientific Inquiry*. <https://www.amazon.com/Existence-Time.../dp/1514788756>. Available in Research Gate.
- (2015a). *Darwin, Marx y Freud*. PUI, México. Available in Research Gate.
- (2015b). *Piketty is Wrong*. <https://mpra.ub.uni-muenchen.de/64593/>
- (2016). *El Arte de Vivir: Individualidad y pertenencia*. EU, México. Available in Research Gate.

- (2017) *¿Quiénes Somos realmente?: La historia del yo*. EU, México. Available in Research Gate.
- (2018a). *The Reconstruction of Capital Theory: The True Meaning of Capital in a Production Function*. <https://mpra.ub.uni-muenchen.de/84284/>
- (2018b) *Globalization: Misguided Views*. MPRA_paper_85813.pdf
- Patinkin, D. (1956). *Money, Interest and Prices*, Harper & Row, New York.
- (1978): "The Process of Writing the General Theory: A Critical Survey", in Patinkin, D., y Clark, L.J. (dirs.): *Keynes, Cambridge, and the General Theory*, University of Toronto Press, Toronto.
- Phelps, E.S. (1966): "Models of Technical Progress and the Golden Rule of Research", *Review of Economic Studies* 33, pp. 133-146.
- (1972): *Inflation Policy and Unemployment Theory: The Cost-Benefit Approach to Monetary Planning*, W.W. Norton, New York.
- Putnam, R.D. (2000). *Bowling Alone*. Simon and Schuster, New York.
- Rabin, M. (1993). "Incorporating Fairness into Game Theory and Economics". *American Economic Review* 83, no. 5: 1281-302.
- Reuter, M., Montag, C. (2016). *Neuroeconomics*. Springer. Berlin, Bermany
- Rodrik, D. (1999). *The New Global Economy and Developing Countries: Making Openness Work*, John Hopkins University Press, Baltimore.
- Romer, D. (2001). *Advanced Macroeconomics*, 2ª ed., McGraw Hill, New York.
- Romer, P.M. (1990). "Endogenous Technological Change", *Journal of Political Economy* 98, pp. S71-S102.
- Roth, A.E., Prasnikar, V., Okuno- Fujiwara, M., and Zamir, S. (1991). *Bargaining and Market Behavior in Jerusalem, Ljubljana, Pittsburgh, and Tokyo: An Experimental Study*. *American Economic Review*, vol. 81, issue 5, 1068-95.
- Samuelson, P. (1947): *Foundations of Economic Analysis*, Harvard University Press, Cambridge, 1983.
- Schwartz, B. (2016). *The Paradox of Choice: Why More is Less*. Harper Collins, New York.
- Seligman, M.E.P. (1975). *Learned Helplessness: On Depression, Development, and Death*. W.H. Freeman. San Francisco.
- (1967) "Failure to Escape Traumatic Shock". *Journal of Experimental Psychology* 74, 1-9.
- Sen, A. (2000). *Development as Freedom*, Anchor Books, New York.
- (2002). *Rationality and Freedom*, Belknap Press/Harvard University Press, Cambridge/London.
- (2009). *The Idea of Justice*. Bellknap Press/Harvard University Press. Cambridge/London.
- Shleifer, R. (1986). Do demand curves for stocks slope down? *Journal of Finance* 41: 579-90
- Simon, H.A. *Reason in Human Affairs*. (1983). Stanford University Press. Stanford, California
- *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organizations*. (1945, 1997). The Free Press, New York.
- Shell, K. (1966): "Toward a Theory of Inventive Activity and Capital Accumulation", *American Economic Review* 56, pp. 62-68.
- (1967): "A Model of Inventive Activity and Capital Accumulation", en Shell, K. (ed.): *Essays on the Theory of Optimal Economic Growth*, MIT Press, Cambridge, pp. 67-85.
- Sherif, M. (1937). "An experimental Approach to the Study of Attitudes". *Sociometry* I. 90-98.
- Sherif, M., Harvey, O. J., White, B. J., Hood, W. R., & Sherif, C. W. (1961). *Intergroup conflict and cooperation: The Robbers Cave experiment (Vol. 10)*. Norman, OK: University Book Exchange.
- Shiller, R.J. (1981) "Do Stock Prices Move Too Much to Be Justified by Subsequent Changes in Dividends"? *American Economic Review* 71, no. 3 421-36.

- Smith, A. (1759). *The Theory of Moral Sentiments*. A. Millar, London, Sixth Edition: 1790.
- (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*. Methuen & Co., London, 1904; Ed.: Edwin Cannan. *The Wealth of Nations*. The Modern Library,
- Stiglitz, J.E. (2000). "The Contributions of the Economics of Information to Twentieth-Century Economics", *Quarterly Journal of Economics* 115-4, pp. 1441-1478.
- Sunstein, C.R., Ullmann- Margalit, E. (2000) "Second Order Decisions". In C.R. Sunstein (ed) *Behavioral Law and Economics*. Cambridge University Press, New York. pp.187-208.
- Tajfel, H., Turner, J. (1986). The social identity theory of intergroup behavior. In W.H. Austin and S. Worchel (eds). *The Psychology of Intergroup Relations*. Nelson Hall. Chicago, pp. 7-24.
- Thaler, R.H. (1991). *Quasi Rational Economics*. Paperback Edition 1994. Russell sage Foundation. New York.
- (1992). *The Winner's Curse: Paradoxes and Anomalies of Economic Life*. Princeton University Press. Princeton, New jersey.
- (1993). *Advances in Behavioral Finance*. Russell sage Foundation. New York.
- (2005). *Advances in Behavioral Finance, Vol. II*. Russell sage Foundation. New York.
- (2015). *Misbehaving: The Making of Behavioral Economics*. Paperback version 2016. Norton, New York.
- Thaler, R.H., Sunstein, C.R. (2008). *Nudge: Improving Decisions About Health, Wealth and Happiness*. Updated version 2009 Penguin Books, New York.
- Tirole, J. (1996). "A Theory of Collective Reputations (with Applications to the Persistence of Corruption and to Firm Quality)", *Review of Economic Studies* 63-1, pp. 1-22.
- (2017). *Economics for the Common Good*. Princeton University Press. Princeton, New jersey.
- Titmuss, R.M. (1971). *The Gift Relationship: From Human Blood to Social Policy*. Pantheon Books, New York.
- Tomer, J.F. (2017). *Advanced Introduction to Behavioral Economics*. Edward Elgar, Northampton, Massachusetts.
- Vanberg, C. (2008). Why do people keep their promises? An experimental test of two explanations. *Econometrica* 76(6): 1476-80.
- Walras, L., 1896. *Études d'économie sociale (Théorie de la répartition de la richesse sociale)*, prepared by Pierre Dockès, under the auspices of the Centre Auguste et Léon ...L Walras - *Economica*, Paris, 1896.
- Wurgler, J., Zhuravskaya, K. (2002). Does arbitrage flatten demand curves for stocks? *Journal of Business* 75: 583-608.
- Zimbardo, Philip G., *Stanford Prison Experiment*. *Stanford Libraries*, exhibits.stanford.edu/spe/about/philip-g-zimbardo. *The experiment was made in 1971*.