The Survivor Peasant

And the Extension of the Theory of Risk

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CONTENT

LIST OF FIGURES

LIST OF TABLES

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PART 1

GENERAL INTRODUCTION

This work offers an interpretation of the economic behavior of the peasants that differs from the version proposed by the doctrine of development about their motive. This works essentially holds that survival and not development is the economic motive of the peasants.

The survivor nature of the peasants is presented from several perspectives: from the reading of the discussion about the peasantry during the 20th century refined but not transformed by the rising up of the descriptive theories, from the interpretation of the so–called stylized facts characteristic of peasants' behavior, from the analysis of their actual risk behavior, and from the extension of the theory of risk, proposed here for understanding the survivor behavior.

The main implication of the survivor peasant is a new normative statement for rural development. The work sketches out the elements of a new normative from the interpretation of the stylized facts and strategies that characterize the behavior of the peasants. This section introduces also a criticism to the normative statement of *what should be*. This criticism is necessary, given the current prevalence of development as the paradigm for the improvement of rural areas[1].

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[1] Development, understood as a program for the perfection of markets, is the ulterior goal of the usual normative of the economic analysis.

The normative statement of development deserves at least two criticisms. One is about its incapability for reformulating its tenets, even for evolving. The normative statement of development is stagnated and fetters the evolution of the economic analysis. What does explain the contrast between the astonishing evolution of the economic theory during the 20th century and the rigidity of the normative statement for rural development, that practically remains at is was at the end of the 19th century? The normative statement of development appears as an unquestionable mandate that inhibits scholars openly to acknowledge the failure of the program of the perfection of markets in rural areas. Otherwise, what does explain the insistency on only one recipe for development, namely the extension of credit and insurance in rural areas?

As example: Due to the immovability of the normative, the failure of programs for the extension of markets for credit on rural areas since the 19th century until today has not been seen as a failure of the unfeasibility of programs based on "what should be". Instead, it is seen as the outcome of a mysterious imperfection of the economic structure of rural households and rural villages that is necessary to reveal. Although after more than one century it has not been found, the research agenda of development economics insists in discovering the mechanism that after repaired would trigger rural development. The immovability of the normative statement of development impedes scholars to recognize that the problem is the feasibility of programs based on the normative dictate of what should be.

Another criticism is about the misleading description of the economic

behavior of the peasant, set by the assumption of development as their economic motive. The assumption of development as the motive of the peasant endowed the economic analysis with a rigid syntax that commands the rationale of the positive analysis, in spite of the evolution of descriptive theories. The economic theory has evolved but the assessment of the economic behavior continues ruled by the syntax of the imperfect behavior of the peasants.

This is the case of the equivalent function of earlier and modern concepts like irrationality and risk aversion. At the beginning of the 20th century the idea of the economic irrationality of the peasants was firmly rooted among a dominant share of scholars. This belief represented the end of the economic analysis. The economic theory works for analyzing rural economies up to the point allowed by irrationality. According to this view, programs for rural development fail because of the irrationality of the peasant.

During the 60's the notion of peasants as irrational actors was gradually abandoned and the optimizing peasant gained acceptance. According to this new view, peasants are rational but inefficient. During the same time the attention of scholars turned to risk in rural economies. Since the 70's on, risk aversion appeared as a new concept for explaining the malfunctioning of the peasant economy.

At the end almost nothing changed. The vision of peasants as deficient actors didn't change with the conceptual evolution brought about by the change between irrationality and risk aversion. The theory certainly evolved with this change, but the rationale of the appraisal of

the rural household didn't. This syntax demands to consider the economy of the peasants as malfunctioning and risk aversion filled the hole leaved by the discredit of irrationality.

Indeed, risk aversion and irrationality perform the same function under the syntax of development. Both concepts are recourses for fixing a limit to the scope and the success of the economic theory: as the irrationality constituted a barrier for any attempt for development, risk aversion similarly represents the ending point for the extension of markets: peasants do not engage in such programs due to their aversion to risk.

The problem seems not to be risk aversion or irrationality, but the syntax of development that demands to consider the rural household as deficient. Indeed, the descriptive analysis sets as granted that rural economies are wrong, and their economic behavior has to improve in order to succeed. The syntax of development frames a discourse for the assessment of rural economies: peasants behave whether irrational, sub–optimal or inefficient. Consequently, the research looks for finding the mechanism that doesn't work correctly.

Do the assumptions of development as the economic motive of the peasants, and of the perfection of markets as the natural normative statement for enhancing rural areas, have something to do with the recurrent failure of rural development? Is the motive of development and its normative, a universal law of economics? The survivor peasants presented in this work holds an implicit answer for these queries.

This work discusses the perception of the peasants as economic actors. It argues that survival is their actual motive: Peasants allocate their internal resources and engage in temporal and spatial strategies *for* securing a smooth horizon of consumption. The discussion is not about the desirability of development or the right or duty of peasants for raising their wealth. The discussion is about the perception of the peasants and its implications. Here it is argued, the main concern of peasants is survival. As the survival concerns rule the economic agenda of the peasants, development is unfeasible. Strategies for surviving differ from strategies for growing wealth. Policies should first attend the basic concerns of the peasants before considering strategies for development.

The survivor nature of the peasant is not an invention neither a discovery. It has a historical background on the works of Alexander Chayanov, Karl Polanyi, A. Roy, Georgescu-Roegen and Amartya Sen. They brought about the conception of peasants as subsistent actors. Yet, the survivor peasant is not the subsistent peasant, since subsistence does not enclose any notion of risk.

Risk behavior is the cornerstone of the survivor peasant. Actual risk behavior differs from the predicted behavior presented under the theories Absolute and Relative Risk Aversion. This work sets out an extension of the theory of risk for understanding the survivor behavior, and offers empirical evidence. The extension is consistent with the usual theories of Friedman–Savage and Arrows–Pratt, and additionally explains the stylized risk behavior of the peasant that these theories are

unable to grasp.

The reformulation of the economic motive of the peasants has implications for the positive and the normative analysis. At a descriptive level, the appraisal of peasants' behavior frees from the notion of inefficiency or irrationality that pervade the analysis. At the normative level, the support to the survivor actor concedes priority to policies focused on the enhancement of the abilities of rural households for securing a smooth and reliable horizon of consumption. This recognition broadens policy options to market and non-market instruments.

The book has been organized in four parts. Since the discussion is about survival and development, the first part is for highlighting the importance of discussing the economic motive of an actor like the peasant. The central thesis of chapter one is that the motive defines the normative dictate and rules the assessment of the descriptive analysis. The fixation of a motive is responsible for the stagnation of the economic analysis of the peasants. For evolving, the economic analysis has to include the motive.

The second part made of two chapters, is a reading of the history of the peasants in economics of the 20th century. Chapter two tracks the debate that prevailed since the beginning of the 20th century and lasted until the final years of the 60's, and ended with the notion of peasants as optimizing actors. Chapter three reads the history from the 70's until today, characterized by the interest of scholars on the study of risk. As it is shown in these chapters, the interpretation of the economic behavior of peasants has been a debate between two streams, one of

development economists, and other that claimed to an extent the survivor nature of the peasants. Former approaches in vogue during the 60's, couldn't grasp the survivor nature of peasant due to the absence of theories and studies on risk, started after the 70's.

The third part composed of four chapters, presents and interpretation of the peasants' economy under the survival motive. Chapter four presents the characteristic behavior of the survivor peasant, and discusses former approaches aimed to describe peasants' behavior beyond development. Chapters five and six present the theoretical framework for describing the survivor behavior of peasants. Chapter five refines the concept of risk aversion for providing a framework that consistently differentiates the behavior emerging from inner attitudes, of the behavior induced by circumstances. Resuming the concepts developed in chapter five, chapter six extends the theories of Absolute and Relative Risk Aversion for including the survivor behavior. This chapter presents empirical evidence from the ICRISAT database. Chapter seven solves a model based on utility functions that describes the survivor behavior.

The fourth part ends the book. Chapter eight resumes the discussion of the first chapter from a different perspective, for addressing the discussion of a new normative statement for survivor actors. Chapter nine closes with some conclusions.

1 ECONOMIC MOTIVE AND ECONOMIC ANALYSIS [2]

Since this work argues for survival as the economic motive of the peasants, this chapter exposes why the discussion of the motive is important. It argues the motive rules the economic analysis. It additionally shows that granting development as the motive of the peasants creates the syntax in which peasants' behavior is judged as imperfect. Granting a motive blinds the analyst to identify the actual motive of the actor. Fixing a motive goes against the scientific nature of economics claimed in the universality of ends by Robbins. The inclusion of the motive in the economic analysis conforms with the scientific nature of economics.

1.1 The Role of the Motive in the Economic Analysis

Why would it be important to discuss the economic motive of the peasants if the economic analysis does not consider such discussion? Even more: the generalized belief is that development is the actual motive held by all economic actors, including the peasants. Therefore it is sensible to ask: Why economics should attend to the eventual differences between a survivor and a developmentalist actor? Do these differences exist? Do they matter? In order to address these questions, let consider the arguments in favor of development, that probably induce to disregard the discussion about the motive.

There is a rationale that rules the economic analysis, responsible for the unquestioned acceptance of development as the unique economic

[2] The economic analysis is composed of the positive and the normative analysis.

goal to be pursued by all economic agents: human beings are rational, and hence they aim to maximize their utilities. The variables of these utility functions are expressed in terms of money. The possibilities to maximize the utilities depend on the possibilities of the economic actors for participating in markets. Provided the validity of the above assertions, the overall objective (the normative one) of an economic policy is to improve all markets towards its perfection. Development is the natural outcome of the perfection of markets, and therefore it is sensible for any policy to work for the improvement of markets.

For one scholar habituated to the rationale of development, the assertion that peasants are survivor and not developmentalist actors may appear naïve or senseless, for several reasons. It may be argued that development, as superior goal of an economic policy, encompasses the demands posed by survivor actors. Policies for development would attend the survivor's concerns.

Policies for survivor actors have not only different emphasis, but also make use of different instruments. While policies for development are based on economic incentives of money, policies for survivor actors may rely on money and market instruments just partially. The market mechanisms or the incentives based on money are not the best means for actors bearing pervasive market barriers. The chances for surviving depend on assets, means and choices that not necessarily serve for growth, and on strategies that not necessarily rely on market mechanisms (e.g. food crops, storing capacity for food–stock and livestock; and strategies for sharing risk).

This work argues that survivor actors demand policies that reinforce their ability for surviving. Indeed, the strategies and actions undertaken for surviving differ from those used for growing. Peasants are fully engaged in survival agendas and policies should first attend these demands.

The argument, that policies for development would include policies for survival, may also hold the idea that the motive is not important for the economic analysis. This chapter aims to show that in reality, the economic analysis is preceded by a notion of the economic motive of the actor. The motive plays as the invisible ruler of the economic analysis. The economic motive defines the normative view and frames the appraisal of the positive description.

First, the motive frames the normativeness. The motive creates the notion of what is needed. Devoid of a motive, the analyst could not set the overall goal of a policy. Without an economic motive, the "*what should be*" has no sense. Without a motive it is not possible to visualize what ought to be. A normative analysis indicates what should be done in order to fulfill an underlying motive. Development as the motive of the economic actor implies the usual normative frame: the improvement of markets toward their perfection.

If the normative frame is a consequence of the motive, the recognition of a new motive should lead the economic analysis to set a new normative frame. If peasants pursue the security of their horizon of consumption above the growth of their wealth, a new normativeness that supports these actors to fulfill their concerns is required.

But the motive not only implants a normative guideline. It also frames the appraisal that accompanies the positive description. For the case of the peasants, the positive analysis not only describes; it also judges. The motive creates the syntax that rules the discourse of the analyst. The motive endows the positive analysis with a system of reference for assessing the behavior of the actor. As the motive indicates the overall objective of the actor, it endows the positive analysis with a sense of what is rational, optimal or efficient. This sense creates a framework that judges if the economic actor behaves according to the goals of the motive or not. Devoid of a motive, the behavior of an economic actor cannot be appraised. The motive implants the perspective that determines what is irrational, inefficient or sub optimal.

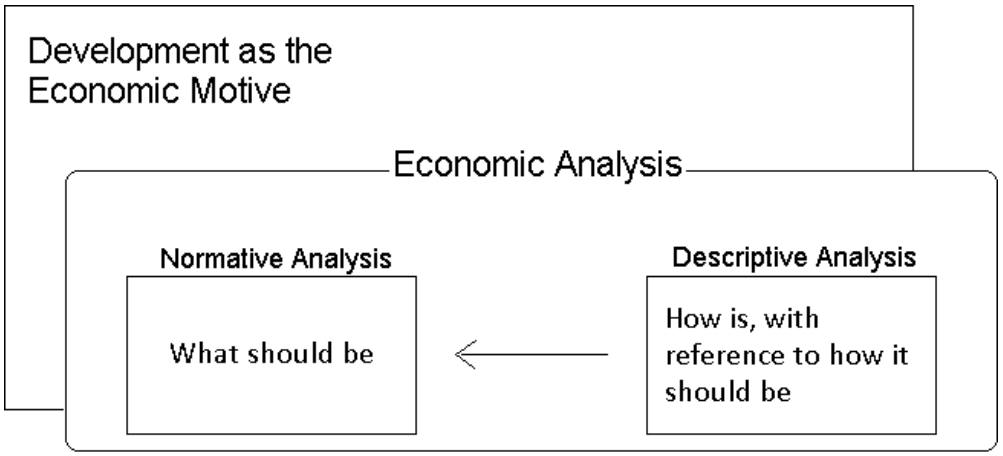

Figure 1. Economic Analysis Ruled by Development

Development as motive sets a rigid syntax. Within this syntax, development is the target and the actual situation is imperfect. This frame holding on one side the bad–wrong and on the other the good–ideal, induce to judge the actual behavior as wrong. The basic tenet of this syntax is that peasants perform badly or wrong. But, is it? Is not an a–priori judgment?

The syntax of development is rigid, though its judgments refine as new theories come up. Under the rule of the syntax of development, new theories would refine the description, but don't bring about changes on the normativeness. Descriptive theories like the theory of risk, the safety–first rule, the permanent income hypothesis, the theories of risk aversion or of asymmetric information are not bound to development as the motive. But for the case of peasants, these theories are used for assessing their behavior.

The assumption that development is the economic motive of the peasants is what creates the idea that peasants behave irrational, suboptimal or inefficient. The language changed but the final outcome of the underlying appraisal didn't. At the beginning of the 20th century western merchants and scholars firmly believed that peasants were *irrational*. At the 60's, the works of Theodore Schultz were convincing to showing they behave rational though *inefficient*. After the 70's the theories of risk served to characterize peasants as extremely *averse to risk*. The diagnosis has always converged, not because it's right, but because it is ruled by a fixed syntax leading the analysis to converge.

In summary, the motive sets the normative command, and frames the appraisal of the positive analysis. The generalized belief of development as the inherent motive of all the economic actors is responsible for both the stagnation of the view about the solutions for rural development, and for the prejudiced appraisal of the economic behavior of the peasants. As long as the motive is not included as one element to be investigated, it rules the entire economic analysis!

1.2 Development as Peasants' Motive

Many facts show that peasants are survivor actors: their negative supply response[3], their behavior seen as suboptimal from risk aversion, and their strategies for sharing risk.

Here it has been argued that the exclusion of the motive in the economic analysis is responsible for the stagnation of the normative analysis and for the prejudiced appraisal of their behavior. But, what impedes to recognize the motive from the actual behavior? Which other ideas reinforce in scholars the idea that the motive is beyond the discussion? Why development economists are reluctant to discuss that development could not be the motive of the peasants?

Part of the answer for this reluctance relies on ideological and political concerns. The impulse to development as the overall goal for all economic actors started with the Marshall's Plan designed for contending the communism. This work is not interested in the ideological discussion about development. It's improbable that scholars of the 40's, 50's and 60's, acted as a partisan body of development. The justification of the survivor nature of the peasants is not against development. Far beyond the political debate, this work is more interested in exploring the reasons and the subtle nuances of the scientific reasoning that could have led scholars to grant development as the actual motive of

[3] At the 50's it was already acknowledged that peasants do not raise the production if prices are high. Even more, in many cases they store food when prices are high, producing a negative supply response.

the peasants.

The reasons for the adoption of development as the unique motive for the economic analysis of rural households can be classified in two different layers. The first one is composed of sensible reasons. Indeed, there are very good reasons that could easily convince scholars to grant development as the economic motive of the peasant. A second layer is epistemological. These epistemological aspects relate to the scientific nature of economics and the conflicts with development.

The current chapter is about the role of the motive in the economic analysis, and about development as the peasants' motive. For this reason, this chapter surfs on the basics of the first layer. The second layer, related to epistemological aspects of the problem, will be explored in chapter 8 where the discussion is centered on a normative guideline for survivor actors.

1.2.1 Peasants' Development: Incontestable but Innocuous

Development economists don't use to mule over the economic motive of the peasants, from very good reasons supporting development. These reasons are technical and ethical. But very good reasons are not enough, no matter how good, sensible or ethical they are.

Technical arguments could be claimed for arguing that development is or should be the motive of the peasants: the improvement of markets is the most efficient way to enhance the economy. The perfection of markets creates more opportunities for producers and consumers. It diversifies the supply and hence widens the spectrum of choices. Mar-

ket competition boosts the technological change and benefits consumers with better prices, qualities, varieties, etc. The technical optimality of improved markets is irrefutable: there is no better solution for the economic efficiency than the perfection of markets. All these reasons are definitely true and cannot be refuted. Development is technically incontestable.

Additionally, development is ethical and morally indisputable. One just has to compare the standard of living of Europe and USA, with the harsh poverty of rural communities of non–developed countries for accepting that development is an ethical imperative. Beyond any doubt, development is desirable. Everyone has the right to develop, and everyone has the right to enjoy the fruits of development. Within an ethical context, the questioning of development as the economic motive or as the economic solution for rural peoples may be seen as evil. Who would argue against the social benefits of development? Development is ethically just right.

It's impossible to pose queries on the optimality and the desirability of development. Technical and ethical reasons would easily convince scholars to adopt development as the motive of the peasants. These sensible and basic arguments would explain why the literature on peasants' development shows an inexistent interest in the discussion of other motives.

The unique argument against the normative statement for rural development –the perfection of markets– is that it doesn't work. Development is technically perfect and ethically desirable, but unreliable.

Programs for the perfection of markets have recurrently failed. They didn't work at the end of the 19th century and failed during the 60's at the height of the theories of development. From the research during the 20th century, the structure of the rural economy has been revealed in detail and the economic behavior of the peasants is cogently known, but rural development does not start. Policies for rural development aimed to improve markets have failed, since the 19th century up to now, everywhere. Policies for development based on the improvement of rural markets don't last and rural peoples remain poor.

In defense of development it would be argued that the recurrent failure of policies oriented to the perfection of markets is to a great extent due to macroeconomic, institutional or political factors. This is true. These factors indeed explain significantly the failure of programs for rural development everywhere at every time. But the reality for rural households is the steadiness of weather, economic and political uncertainties. The economy of the peasants is open and precarious. The factors that would support a stable path toward development are steadily instable. An economic actor imbedded in such environment has to consider his agenda according to the possibilities and the steady conditions of his economy. This is what the peasants actually do. Peasants do not embrace development as motive because the economic context allows them just surviving.

Rural development is technically incontestable and ethically indisputable, but innocuous. In spite of the efforts of generations of well–intended scholars and policy makers, is has not lasted.

1.2.2 Contributions of the Agenda of Development Economics at the Micro Level

Beyond political factors, there is a microeconomic perspective of the problem that fits with the demands of the syntax. The imperfect performance of rural economies has been considered a problem of irrational–inefficient–suboptimal behavior of the peasant. In fact, the research agenda of development economics aims to understand why rural peoples deviate from the optimal behavior that would yield the highest profits. The objective of the research agenda in microeconomics has been to find what is wrong[4]. This agenda is somewhere else presented as the search of a hidden mechanism that would trigger rural development after repaired.

The research agenda of development economists has yielded a cogent knowledge of the rural economy. Thanks to these theoretical and applied investigations, the internal structure and functioning of the peasants' household is known today. From the Agricultural Household Models it is known how peasants allocate the internal resources of the household. During the last forty years, scholars have explored the influence of risk in the structure and performance of rural economies. Today scholars know how risk affects peasants' decisions, and how they respond individual or collectively. From the theories of risk aversion scholars acknowledge that peasants have good reasons to act as risk averse, though, in many cases they act as risk neutral or risk lov-

[4] The modern agenda focused on the study of risk began at the 70's after the failure of the theories for development of the 50's and the 60's.

ers. The logic that rules rural contracts has been revealed as well. It's also known that rural institutions provide a necessary networking for assimilating idiosyncratic shocks. The study of the imperfections of rural economies has explained the forces that induce the creation of communal arrangements for sharing risk and its final forms. Development economists have understood the economics of risk sharing in rural areas. Thanks to the research agenda of development economics, the survivor nature of the peasant has been revealed.

The program aimed to explore the economic structure of the rural settings has achieved its objectives.

1.2.3 The Stagnation of the Research Agenda of Development Economics

At the decline of the normative theories of development at the end of the 60's, development economists knew the so–called stylized behavior of peasants: their negative supply response and the lack of reaction to policy incentives. The 70's brought about a renewed interest on risk. From the 70's up to now, the research on risk covered the economics of rural contracts, the characterization of the peasants' risk aversion, and the study of all instances in which risk aversion affects the performance of the rural economy. During the last eighteen years the interest of the research has been the economics of risk sharing. Additionally, studies based on Agricultural Household Models shed light about how peasants allocate their internal resources.

Without major imprecision it can be said that the structure and the function of the rural economy has been already unveiled. The stylized

facts characterizing the peasants, as well as the internal functioning of the household are known. Their actual risk behavior and both the temporal and the spatial strategies for coping with risk are also known[5]. Now that every conceivable element of the rural economy has been studied and its function is known, what and where scholars should look for?

The state of the art shows a present interest on the economics of risk sharing. It could be argued that the new tasks are to exploring the economic outcomes of the combination of these elements. For instance: how the inter–temporal strategies for coping with risk are assembled with spatial strategies for sharing risk. A similar front of research was tackled with the research on risk aversion. During the 70's, and beyond the 80's the research aimed to recognizing how risk aversion affected one or more variables. Very likely the research on risk sharing aims to explore the economic consequences of the combinatorial set of coexistent arrangements for sharing risk: how they integrate each other, and how a change of one strategy for sharing risk affects other strategies.

The interest of this combinatorial set of possibilities is about costs. What is the cost of two coexistent strategies for sharing risk and how the enhancement of one or the two strategies would reduce the costs or enhance the household, for development? The ulterior objective of these studies would be as usual, the eventual discovery of the hidden

[5] See section 3.5.

mechanism that inhibits the peasants' households to perform right. Since in play is the optimality of the inter–temporal and the spatial allocation of resources, these studies would aim to show how markets for credit would improve the optimal behavior of the rural households.

Yet, very likely, these studies will not bring new insights. Some arrangements would appear less efficient than others; policies should enhance the more efficient options for lowering costs and improving efficiency, for development. According to what has been already found, the reinforcement of markets for credit and insurance would help rural communities to adopt more efficient arrangements and less costly temporal strategies for coping with risk. Policies should enhance these local institutions for more efficient responses.

These researches will not bring further insights because as usual, the recommendations are inferences of the motive. These researches do not intend to reveal the motive of the economic actor in order to understand the mechanisms used to accomplish the objective of the motive. These recommendations are for bridging the gap between the imperfect real and the optimal ideal behavior expected of a developmentalist actor. The research agenda of development economics at the micro–level is exhausted, not only because all the conceivable instances have been explored, but because its discourse is repetitive and failed.

Why does the microeconomic research on peasants' economies converge irremediable to a repetitive pattern of recommendations? What leads scholars to insist on a failed recipe?

1.3 The Trap of the Economic Analysis

It should not surprise to confirm that the recommendations *for development* turn around the same recipe. As in the 60's, as in the first years of the 20th century, as in the last years of the 19th century, the solution for rural development remains unalterable: the improvement of markets for credit, insurance, technologies or specialized labor.

The adoption of development as the economic motive with the consequent insistency on a fixed recipe has an historical background. At the beginning of the 20th century commercial and ethical concerns played as basic motivations for the development of rural communities of Africa and India[6]. Later, with the emergence of central planed economies, political and ideological concerns supported the adoption of development as the unquestionable motive of all economic actors. With the Marshall's plan, the political imposition of development brought about a long–standing view about the central concern of economics. Today new scholars believe by legacy that development is the natural motive of everyone.

This narrow view of economics gives no room to other motives. Well recognized scholars argued before that peasants are engaged in an

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[6] As it will be shown in the next chapter, part of the interest on the development of Africa and India at the first years of the 20th century was the provision of tropical commodities that could not be produced in Europe. Other scholars of this time argued ethical concerns: since the British had done much for the development of India, it was time for the Indians to return. Others could of course hold moral concerns about the backwardness of indigenous peoples of Africa and Asia.

economic agenda different to development, and consequently that a different normative guideline was demanded. This alternative view was expressed by scholars like A. Chayanov (1926), Karl Polanyi (1944) and other economic anthropologists; de Roy (1951), Georgescu Roegen (1964) and Amartya Sen (1966). But this alternative view hadn't any chance because of the political and ideological struggle of the cold war. As development became the motive to be pursued, economics became at the service of political and ideological interests.

To confirm development is the widespread belief that rules the systematic thinking of nowadays scholars, one just has to pick up some papers on development economics aimed to model specific problems of rural areas, to realize development is granted as the motive, and that "the problem" is the deficient performance of rural economies. Under these tenets, development economists use to appraise the solutions in terms of what should be done for development. Once development is the motive, a framework to measure all the inefficiencies is adopted. Once these inefficiencies are detected, the normative dictates what should be done in order to improve the efficiency of the rural economy.

The progression of descriptive theories may bring about the impression that new insights on the economies of the peasants will finally lead to discover the key to rural development. But the research does not open new ways, since the appearance of new theories has not influenced an apex the normative statement of development. New theories would bring new insights about how things are, but under the same perspective set by the normative of what should be: describing the imperfections of rural economies, and suggesting what to do in or-

der to enhance markets. Why should it surprise the failure of the normative statement for rural development if the methodological approach disregards the actual motives of the peasant?

The defense of the existence and the validity of other economic motives different to development is not an invention or a recourse. It is at the hearth of the subject matter of economics as science. Other motives have been disregarded, but its arguments have not lost validity. The universality of ends of economics presented in 1932 by Lionel Robbins is at the line with the scientific nature of economics. He showed that economics has nothing to do with ends themselves, but with the conflict between scarce resources and ends. The universality of ends implies the consideration of the motive in the economic analysis. Provided the subject matter of economics is the conflict between ends and scarce resources for given ends, the economic motive should be the first item to be known, before prescribing a solution.

If scientific economics has nothing to do with specific ends, setting an end like development misleads the economic analysis. The trap of the economic analysis is granting autarky to a motive. Granting a motive as universal, acts as a trap responsible for the stagnation of the normative analysis; for the direction of the economic research that brings all discussions to a repetitive pattern of recommendations; and for the divorce between the descriptive and the normative analysis.

The stagnation of the normative analysis roots in the setting of development as the motive, because the normative statement of the perfection of markets is a corollary of development as the motive. Additional-

ly, the fixation of one economic motive is a trap for the descriptive analysis. As exposed above, it creates a syntax that rules the descriptive analysis in terms of what is wrong. The overall question of the research agenda of development economics is about what is wrong in peasants' economies. The fixation of a motive stretches a veil that impedes scholars to recognize the actual motive of the peasants. Indeed, the stylized behavior that reveals the survivor nature of peasants has been uncovered by the research of development economics. Yet, the veil imposed by development as the unquestionable motive has inhibited scholars to discover the survivor nature of the peasants.

The trap created by the unquestioned assumption of development as the economic motive is also responsible for the divorce between the descriptive and the normative analyses. The research has revealed all the structures, functions and mechanisms used by rural households and peasants communities, but the knowledge and the information of the positive analysis has not influenced the normative dictation. During the 20th century scholars refined the economic theory as never before, but these advances have not been sufficient for reformulating or evolving the normative dictation of "what should be". If there were no divorce between the descriptive and the normative analysis, how else can we understand the outstanding evolution of the descriptive power of the economic theory in contrast with the stagnation of the normative analysis during the 20th century and until now, that remains as it was at the end of the 19th century?

1.4 Economic Analysis According to Different Motives

The inclusion of the motive in the economic analysis would rearrange the rationale of the economic analysis. To account for the diversity of ends that human beings might hold, economics should ask for the motive of an actor, before setting the problem to be described and solved. Economics would free of ideological and political biases by considering the allocation problem under the particular motive of the actor.

It is interesting to notice that the usual analysis applied to firms, or to competition and market structures, does not judges the economic behavior as wrong. The positive analysis describes how thing are and the normative analysis focuses on what should be done for welfare growth or equity. The usual analysis corresponds to development as the motive. Firms aim to maximize their profits. If the actor is in position for pursuing development, and development is feasible for an actor, the economic analysis as it is known would provide the right recommendations, both for the actor and for policy makers.

But, how the normative analysis should be reformulated if development is not the economic motive of the actor? How the economic analysis should proceed in order to consent with the universality of ends? What would be the discourse of the positive analysis free of a prejudiced appraisal? Some of these interesting questions will have an answer only if the motive is included in the economic analysis. By now, let draw how to integrate the motive in the economic analysis, and what would be the function of the positive and the normative analysis, regarding the universality of ends of economics.

If the economic analysis includes the motive as part of the exploration, descriptive theories would help scholars to portray the economics of an actor and its context, and help the analyst to reveal the economic motive of the actor. The descriptive analysis would not assume as inefficient the behavior, but as indicative of a motive. Descriptive theories would help to reveal the motive. The next graphic could help to visualize additional assignations for the positive and the normative analyses, according to the universality of ends of economics. According the motive and the concerns of the actor, the economic analysis would explore what should, or what could be done for supporting the actor to accomplish its economic ends.

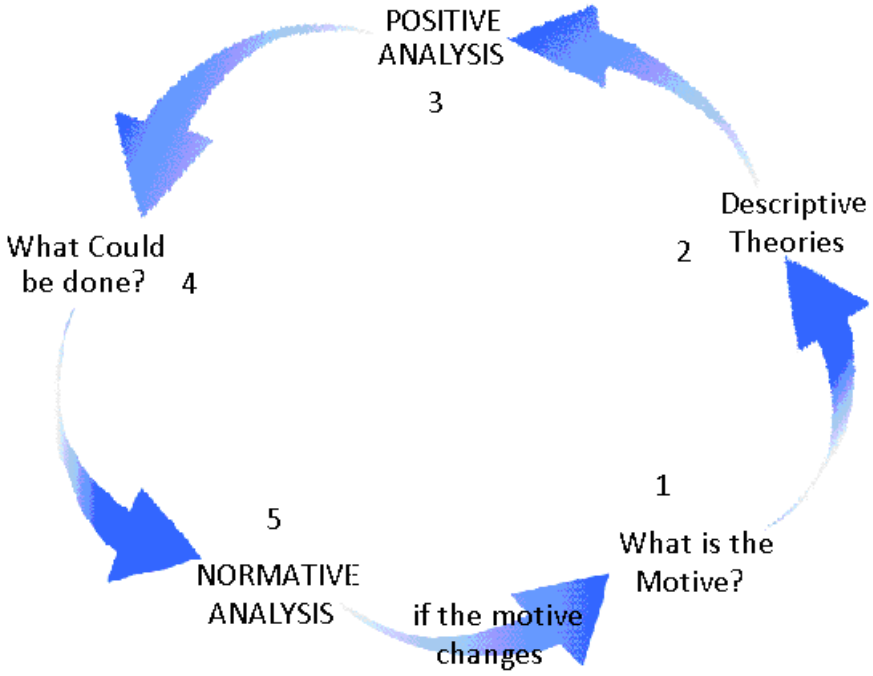


Figure 2. Economic Analysis and the Universality of Ends of Economics

The economic analysis should first to consider the identification of the economic motive of the actor (1). This identification would equal the

economic concerns of the actor with the economic problem to be solved by the economist. The economic behavior observed provided by descriptive theories, would reveal the economic motive (2). Once the motive is identified, the appraisal of the behavior according to the motives of the actor becomes feasible (3). The identification of the motive also provides the necessary insight for setting a normative dictate (4). The appraisal of the behavior and the perspective of the normative guideline would produce the necessary information and knowledge for identifying what could be done for fulfilling the demands of the motive (5). The fulfillment of the demands of the motive would bring about whether the economic fulfillment of the actor, or a new motive feasible to be tackled (1).

Therefore, the inclusion of the motive brings about a recurrent structure for the economic analysis.

1.5 Chapter's Summary

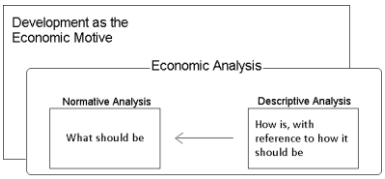
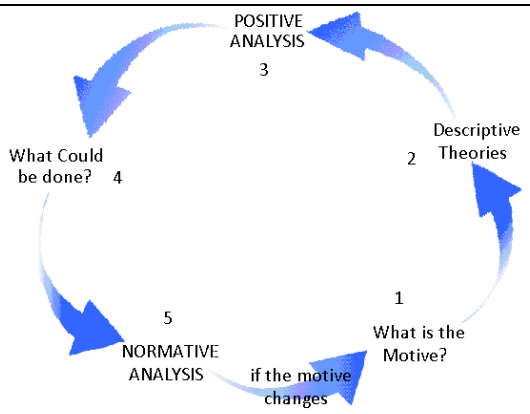
This chapter argues that the failure of rural development can be assigned to the exclusion of the motive in the economic analysis.

With its exclusion, the economic motive plays as ruler of the economic analysis. The unquestioned adoption of development as the economic motive of the peasants endows the economic analysis with a syntax. Within this syntax, the normative dictate sets a program proved unfeasible: the perfection of markets. The syntax also endows the positive analysis with a system of reference in which the economic behavior of the peasants is wrong and has to improve in order to achieve the desired efficiency for development.

The economic analysis that excludes the motive holds a linear structure composed by the positive and the normative analysis. Due to the syntax of development and to the autarky granted to the motive, the survivor nature of the peasants has not been recognized.

The economic motive should be integrated in the economic analysis. The descriptive appraisal should serve to the recognition of the economic motive of the actor. The integration of the motive produces a recurrent structure for the economic analysis.

Table 1. Economic Analysis and Economic Motive

Economic Analysis	
Excluding the Motive	
Including the Motive	

PART 2

THE PEASANT IN ECONOMICS OF THE 20TH CENTURY

The academic debate of the 20th century about the economic nature of the peasants comes out from two conflicting views. One view considers the peasants as developmentalist actors. Another view stresses rural actors have a different economy and deploy a different behavior. The developmentalist view prevailed during the 20th. This second part inspects the contributions of the main representatives of these two views, and the economic theories for describing their behavior.

The discussion of the first seventy years of the 20th century turned around the rationality of the peasant. Chapter 2 analyzes this period. As it will be shown, the fettering prejudices of western scholars about the intellectual capabilities of Africans, Negroes and Asians for performing as profit maximizer are a heritage of earlier views. Indeed irrationality –the opposite of the term "economic rationality"– bears still a pejorative nuance, because before Von Neumann[7], the expression was used for describing the behavior of peoples considered inferior.

Theodore Shultz and other development economists showed convincingly that peasants are rational actors. The acceptance of peasants as economically capable overshadowed the notion that they may hold a

[7] Von Neumann and Morgenstern formalized the concept of economic rationality in 1944, as they proposed the model of utility for describing human economic behavior.

different motive to development. The acceptation of their rationality implied in fact the acceptation of development as their motive.

But the triumph of the optimizing peasant was immediately followed by the decline of normative theories of development. Rural development didn't take place as expected in spite of though the financial and political support. This decline led scholars to study the structure of rural economies, which characterizes the second period, between the 70's until the end of the 20th century. This are the topics treated in chapter 3. The study of the economic structure of rural economies is at the same time the study of the influence of risk.

From the study of the role of risk in rural economies emerged during this period the notion that peasant, for development, are engaged in coping with risk. The notion that peasants should act for maximizing profits as it was thought during the 50's and the 60's, changed for a new view in which peasants perform inefficiently from risk aversion. The modern view that dominates the analysis in development economics is ruled by the risk–coping rationale.

The study of risk included the economics of rural contracts, the characterization of the aversion toward risk of the peasants, the influence of risk and risk aversion in the performance of any variety of instances of decisions, and the study of risk–coping strategies. During the last 17 years scholars have studied the economic of risk sharing. These studies on risk sharing have revealed the "consumption smoothing motive" the cornerstone of the survival motive.

2 THE EMERGENCE OF THE DEVELOPMENTALIST PEASANT (1900–1970)

This chapter tracks the view about the peasants during the first part of the 20th century, until the decline of the normative theories of development, at the end of the 70's. This period shows the debate between development scholars and economists, and the Russian school led by A. Chayanov and economic anthropologists. This debate turns around the rationality of the peasants and ends with the political triumph of the optimizing peasant.

The notion that peasants are for development is probably rooted in the moral and ethical concerns of Adam Smith, the founder of economics. These are also found in concerns of economists of the 19th and the 20th centuries. But considering this belief has been a central assumption among scholars, how the advances of the economic theory have it influenced? How consequently scholars and policy makers have approached the backwardness of rural areas?

This work aims to outline an answer to these general questions, restricted to the history of economics of the 20th century. This chapter in particular considers the period between the beginning of the 20th century and the decline of the theories of development at the late 60's. Next chapter considers the period that followed the decline of the theories of development up to nowadays, when scholars have focused on the influence of risk on rural economies. Indeed, it is not possible to define a peasant as survivor actor without a clear picture of its risk behavior. It explains why former scholars weren't unable to define and describe the survivor peasants, as now it is possible. Even so, the fun-

damentals of the survivor behavior were well known since the first systematic approaches of the peasants.

2.1 Legacy of 19th Century Economics

For the first period of the 20th century, it suffices to consider the legacy of economics of the 19th century, the ideas scholars and merchants held on rural development, and their prejudices about the capability of the peasants to perform as economic actors. Some of the ideas and prejudices that scholars and merchants of the first years of the 20th century held, are still very common nowadays[8], in spite of the advances of the economic theory.

2.1.1 Positive and Normative Economics

The 20th century dawned for economics with the fruits of a debate of the end of the 19th century about the scope and method of the emerging science[9]. Neville Keynes explained the separation between positive and normative Economics. This last, referred to economics ideals. In fact, Keynes considered normative economics a branch of Ethics (Keynes, 1891, p. 21). Normative economics can be seen as the set of ethic assertions that indicate what should be done for the progress of the mankind. The contribution of Keynes was not only about the separation between positive and normative economics. Keynes presents

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[8] See for example Waters, 1974, who still defend Africans (p. 56): "He is generally not stupid, he is generally not ignorant, and he is generally not inarticulate…"
[9] This debate was synthesized by John Neville Keynes in his book Scope and Method of Political Economy, 1891.

economics as a science. The scientific nature of economics roots in "*the possibility of studying economic laws or uniformities without passing ethical judgments or formulating economic precepts*"[10].

But the notion of normative economics for Keynes is not associated directly with development as it is nowadays. For him, normative economics "*seeks to formulate economic precepts*"[11]. This remark is important, regarding the course that the understanding of normative economics took at the middle of the 20th century. In particular, it is important to notice that normative economics is void of assertions about what specifically should be. This aperture maintained the independence of economics to the choice of an economic end. The relationship, between open assertions about normative economics and economics ends, was considered in more detail by Lionel Robbins in 1932.

2.1.2 Other Useful Concepts

The legacy of the 19th century was not only epistemological and methodological. Marshall's work for the analysis of demand and related concepts like elasticity, were already of use in the economic jargon at the end of the 19th century. The capability of economics for analyzing specific microeconomic problems grew with the marginalists and the mathematization of economics. To analyze the behavior of economic actors, economists adopted to talk in terms of utility and decisions at the margin. Alexander Chayanov, the first economist that outlined a

[10] (ibid, p. 22)
[11] (ibid, p. 23)

systematic description of peasants, expressed the survival motive under a marginalist jargon: peasants take decisions to reach the equilibrium between consumption and drudgery: they commit in drudgery up to the marginal benefit of the outcome equals the cost of the drudgery.

2.1.3 The Universality of End of Economics

But the discussion about the scope and method of economics transcended the work of Keynes went far into the third decade. It reached a height in a classic essay of Lionel Robbins appeared in 1932. Robbins emphasized that the sphere of interest of economics goes beyond problems of material welfare. Instead, economics concerns with all sorts of situations in which there exists a conflict between scarce resources to be allocated for a given set of ends, no matter the nature of these ends. An economic problem exists as soon as the use of resources has to be decided and the ends have to be prioritized. In other words, economics is not concerned with ends itself.

This comprehension has not been refuted, but it is not honored, due to the overwhelming interest on problems related with wealth and development. The universal aim of economics was overshadowed after the new deal, with the adoption of development as unique end to be pursued. The rejection of the universality of ends narrowed the interest to policies related to wealth growth. In practical terms, the economic men and its performance was considered depending on markets. Income and profit became the basic means of progress.

2.1.4 Western Merchants and Western Altruists

Among western scholars the backwardness of Africa and India was a problem, because they wanted a reliable and abundant production of cotton and other tropical commodities that couldn't be produced in Europe. Additionally, they argued ethical and moral reasons. Aside ethical arguments, some British circles were interested in trade with Africa and India (Baillaud, 1906; Dodwell[12], 1910). Development as the motive of these peoples was out of the discussion. The attention of western scholars was on normative aspects, and revolved around how to make them more productive.

The concern of social scientists in the development of the peasantry of Africa and India lied on the factors and ways that should be considered for accomplishing the economic transformation of the rural areas. The problem was posed in terms of two views. For some scholars, the backwardness of Africa and India was due to the lack of infrastructure and other economic factors.

But it was also common to consider the basic problem the laziness, or incapability of Africans, Indians, and of the Negroes in America. Some scholars found in peasants' behavior an obstacle for their development. Since the western observers realized that peoples of rural areas of Africa and India didn't behave as they expected from the economic point of view, they acknowledged the problem as one of *rationality*.

[12] Dodwell in 1910 presented an extensive document about the economic problem of Indian peasants: permanent indebt, illiteracy, subsistence.

During the first part of the 20th century economists held a generalized interest on the rational behavior of economic actors, and pursed for the psychological background for explaining the motivations of economic men[13]. Both the beliefs about peasant motives and the interest on the psychological background of the economic man traced the layers of part of the discussion about peasants' rationality.

2.2 Peasants in Economics before the Marshall's Plan

The literature on Peasants' economics under the western tradition declined for the second decade of the 20th century. The economic discussion was strongly nuanced by political concerns with the emergence of central planed economies. The political impetus of the soviet model made also to stand up some economic views, like the one proposed by Alexander Chayanov.

2.2.1 Alexander Chayanov and the Subsistent Peasant

Thanks to the Russian tradition in economics, the literature on peasants gained the first systematic description with the work of Alexander Chayanov[14]. His thinking belongs to the Russian economists involved in peasants' issues after the revolution of Russian peasants in 1861. Even though the description of the peasants is made under economic lines, the work of Alexander Chayanov is nuanced by the political affaires of the epoch, between the "communist" and the capitalist systems. Chayanov's work is a response both to the internal struggle

[13] See for example Mitchell, 1914.
[14] Referred in Thorner (1986).

with the conservative wing of the Bolsheviks, and to the capitalist view of the rural economy. Chayanov's work first published in 1925, was motivated by the debate emerged from Lenin's writings about peasants and the policies implemented by the New Economic Policy of the Bolsheviks. Also noticeable, Chayanov didn't mind the rationality of the peasants, as western scholars did.

Some other peculiarities were present in Chayanov's argumentation. For the Marxists of that time, wealth is produced from the added value of labor, peasant families were seen as entrepreneurs and self–exploited laborers at the same time, since the typical peasant family didn't hire labor. Additionally, and from the characteristics of Russia, land was considered a variable, whose amount did depend on the needs of the family (Thorner, p. xxi., 1986).

The Survivor Peasant of Chayanov

Yet beyond the nuances of his epoch, the legacy of Chayanov is related to the survivor nature of –by him called– subsistent peasants. He simply considered peasants do not pretend further goals than subsisting because the rural economy didn't allow them to participate in the modern –capitalist or communist– economy. The economy in which peasant households develop their economic activity was by Chayanov called *natural economy*. One of his interests was to develop a theory that conciliates the presence of natural economies, embedded in capitalist economies. Is it not coincident with the assertion that the perfection of markets cannot be extended to rural areas? Chayanov argued that both the structure of rural economies and the motivations of the rural actor are different from the economy and motivations of other ac-

tors. Both the different motives of the rural actor and the different structure of rural economies led –though nuanced by the fashion of his times– Chayanov to consider the incapability of the "capitalist" version of economics to describe the rural economy.

For Chayanov, the theory of "capitalist" economy was unable to describe the peasant family, since the variables used to model the unit, namely prices of inputs and wages, interest and capital, used to calculate profits, couldn't be used in a context with absent markets[15].

Very likely, the interest of Chayanov to elaborate a theory of coexistence of different economies was motivated by the political dynamic characteristic of the epoch. The idea that motivated Chayanov to consider peasants as characteristic units of non–capitalist economies, was that peasants do not pursue maximizing profits, as capitalists economic actors do. Peasants do not aim to maximize profits because income related activities provide just a share of the effective income of the family.

But the arguments against the economics of a capitalist farm don't hold anymore. The economic theory has overcome its inability to describe the economy of the peasant household. The concept of shadow prices served to compare values of variables belonging to goods with or without markets. For example, shadow prices could be used to explain the decisions at the optimum between prices of marketable goods pro-

[15] Chayanov, 1986, p. 3.

duced by the households and the value of the effort of producing them, in contexts where markets for labor are absent. In order to value the price of activities without prices (no markets) other concepts like opportunities lost are used[16]. Indeed, the modern modeling of the peasant household doesn't demand as assumption the existence of capitalism. For an autarkic household it would be possible to carry out an analytical description of its behavior, based on shadow prices, subjective discounting, and utility functions not necessarily based on the variables for which the maximization of the utility is related to the maximization of economic profits.

The arguments of Chayanov don't refer to the incapability of the "capitalist" theory of economics for describing the natural economy of the peasants only. He also argued about the motives of the rural actor in a natural economy: the "*human economic activity is dominated by the requirement of satisfying the needs of each single production unit, which is, at the same time, a consumer unit*"[17]. The balance between consumption and drudgery should therefore appear as a stable ratio, whose exact value depends on other variables like ratio between the number of working members and the total number of consumers within the family, labor intensity, land, etc. In other words, peasants plan their economic activities in order to reach the optimal ratio between efforts and consumption. Peasants are for subsisting.

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[16] Dillon and Anderson (1971, p. 26).
[17] Ibid, p. 4.

It is interesting to note that Chayanov's work doesn't have any comment about the importance and the role of risk in peasants' economies[18]. The term subsistence has some connotations to mention. Regarding scholars of the first part of the 20th century weren't unaware of the role of risk in the economy, the term subsistence seems appropriate to describe the picture figured out by Chayanov. Subsistence differs from survival in several respects. By now, it suffices to say that the expression subsistence doesn't hold any concern with risk. Survival as a motive has in risk its cornerstone concept.

The notion that peasants are subsistent actors seems to be the basic legacy of Chayanov's work. In some literature the expression *Chayanovian peasants* also refers to autarkic and isolated households. Both ideas are unfortunate falsifications of the actual conception of Chayanov about the peasants' economy. Needless to say, all these falsifications do not belong to the legacy of A. Chayanov.

He considered the rural economy as bearing an economic stage that could only be overcome with the enhancement of the rural sector[19]. He considered the association of peasants in cooperatives would give them more political power, and would enhance them economically for integrating rural communities into the whole economy[20].

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[18] According to the ignorance on risk, the term seems reliable to describe the picture figured out by Chayanov. The term subsistence differs from survival in several respects. By now, it suffices to say that the expression subsistence doesn't hold any concern with risk.
[19] See for example the chapter 7 of his book.
[20] Albeit this view bears as inconsistency that peasants could compete with industrial

The political and ideological nuances of Chayanov's epoch are updated. Moreover his qualms to the economic theory are invalid arguments today. It is also true that A. Chayanov as other later scholars weren't aware of the influence of risk in design of the institutional arrangement of rural areas. Nevertheless, Chayanov was able to outline a basic characterization of the rural economy that accounts for the weakness of the structure of rural economies, and for the economic motives of the peasants. Chayanov proposed a normative that would improve the rural economy, based on the enhancement of cooperatives that would provide common goods and infrastructure for a better performance in agriculture and whatsoever economic activity present in rural areas; and that would improve their capacity to bargain and position them with other more powerful economic actors.

The conceptualization of peasants' families as basic consumers of their production, allow explain what development scholars weren't unable to understand. Since the family produces in great part for self–consumption, a rise on the prices of the goods produced and consumed by the family could bring about scarcity of this good.

Additionally, the balance between work and consumption constitutes a first approach for describing the actual concern of the peasant's family. But actual peasants' behavior is expectedly different to the behavior

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farms. He considered similar technologies, something that then didn't and currently doesn't hold (Kerblay, IXX, 1986)

outlined by Chayanov, since risk plays a preponderant role in this behavior, as it will be shown. The legacy of Chayanov comes fundamentally from his realization of the central motives of peasant families around their survival.

2.2.2 The Peasants in Economic Anthropology[21]

The debate among the two versions of the economic motive of the peasant was feed by economic anthropologists. Truly, anthropologists had much to say about development and the way of living of peasant communities, regarding the beliefs about their undesirable behavior as economic actors, and regarding the integration of those communities in the economic process of development. Unlike economists, economic anthropologists focus on the patterns that rule the economic and social behavior, rather than on the changes on this behavior brought about by the economic behavior. They additionally consider the historical trends that make the peasants what they are.

During the 40's, economic anthropologists warned the transformation of the market oriented economy would destroy the fragile social tissue, with negative impacts for these peoples. Yet, economic anthropologists seem to be miscomprehended. Some critics say the main interest of

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21 Dalton (1971, p. 3) points the origin of economic anthropology in the work of Malinowski (1922) and others like Firth, but the field largely developed from the work of Karl Polanyi (1944). Between the sixties and the seventies –see for example Economic Anthropology and Development (Dalton, 1971) and Tribal and Peasant Economies. Ed. George Dalton (1967)–, further contributions to the understanding of the peasantry are due to Dalton and others Including Paul Bohannan, Clifford Geertz and Eric Wolf.

anthropologists is the dismantling of the indigenous world for opening up to the western culture[22], development economists accused them to hinder the development proposed by the western culture.

The Description of Peasants' Economy in Economic Anthropology

The description of peasant households in economic anthropology lies on different tenets of that of economists. While rural households were by development economists considered as isolated cells and production units, the description proposed by economic anthropologists focuses on the relationships among households. Economic anthropologists centered their attention on the cultural and social environments ruling the economic behavior of households[23]. While economists are concerned with the optimality of the economic behavior and of the regulations, anthropologists are more aware of the impacts that this behavior promoted by the market oriented society exerts on cultural and social traditions.

Karl Polanyi, the highest exponent of economic anthropology, argued that the economic livelihood of primitive and peasant communities have an economic aspect in which labor, income, trade and exchange play the role acknowledged nowadays in economics; but additionally all they are forms of social integration. Polanyi said: "*in traditional bands, tribes, and kingdoms, the institutions through which goods were produced and distributed were "embedded" in* –an inseparable part of– *social in-*

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[22] Carlos Fuentes at the preface of the book „The Teachings of Don Juan, Carlos Castaneda"
[23] Dalton, 1971, p. 218.

stitutions: that the "economy" functioned as a by–product of kinship, political, and religious obligations and relationships"[24]. For him, the institutions in charge of the economic distribution are a sub–product of the social structure ruling the community. An individual in a primitive society secures its livelihoods not by its economic struggle as it uses to be now, but from his bounding to a social structure in charge of production and redistribution. Exchange, barter and gifts are not forms of economic trade only, but principally the affirmation of the binding to a social structure.

The picture proposed by economic anthropologists differs from that presented by A. Chayanov. Economic anthropologists didn't consider the economic isolation or the lack of political and economic power pointed out by Chayanov. They either minded the problem of economic rationality as development economists did. They focused in the social structure responsible for the allocation of resources and for the distribution of food and other goods for subsistence. Under this structure, the problems of cooperation are ruled out since the belonging to a social structure of course depends on the performance of the rules.

This view of the rural world suggests many questions about the role of economics, the consequences of the contact of such semi–primitive communities with the socialized world, the integration of these peoples with the modern world ruled by the market mechanism, and the impacts of the market oriented society in the behavior and the customs of

[24] Dalton, 1971, p. 13

these peoples. In fact, some recent authors explore the impacts of development in the historical and social trend of peasants that have received the new form of rationalization (Thornton, 2005).

Are these structures still part of the peasants' communities somewhere? Certainly, rural development has failed everywhere, but peasants have also changed from their contact with the market oriented world. This was the warning of Polanyi: the dismantling of the rural structures responsible for the distribution of goods and the survival of their members.

Economists cannot respond completely this question, though it certainly has an economic side. During the last 17 years development economists have studied institutional arrangements for sharing risk. It is possible the current institutions used by peasants for sharing or for decreasing risk are the remains of former more complex and more enhancing institutions. The new institutional economics and the economics of risk sharing probably offer a convincing answer for the existence of those social and cultural structures observed by economic anthropologists. It is also probable that as Polanyi foresaw, the market oriented economy has achieved to dismantle these structures that nowadays economists recognize play an important role for assimilating idiosyncratic shocks.

Rural Change According to EA

Fuentes (Castaneda, 1986) has the right to consider economic anthropologists are at the end promoters of the economic style of the market oriented world. This is at least the case of some economic anthropolo-

gists like Redfield who, in a normative perspective, considered the peasants as intermediate stages between the indigenous folks and the urban citizens. Redfield (1953) places the peasants within a continuum, as an intermediate actor between two differentiated types of societies: the western and the primitive. According to this continuum, economic relations shape the social relationships of urban actors. In primitive or folk settlements, the social structure defines the economic relationships. Peasants are not primitives individuals neither Western citizens.

For Dalton, peasants comprise "all the non–Western rural peoples or communities… without any specific social or economic institutions meant by the term"[25]. Peasants didn't exist before the existence of cities (Redfield, 1953, p. 31), though they preserve traditions and cultural forms belonging to tribal societies. Peasants are intermediate actors that hold characteristics of both sides: they are linked to urban economies, but in the countryside economic relationships are ruled by the social existing structure. Latin American peasants are indeed a mixture of descendants of tribe folks and Spaniards. The vision of a continuum allows to presenting, both the problems that peasants face as economic actors, but also the challenges that development economists and anthropologists face.

Certainly economic anthropologists hold a more respectful attitude toward these structures. Economists on one side discovered recently but

[25]Dalton 1971, p. 219.

late, that these institutions have an economic motivation. They also understood that these institutions were created to face risks.

But this discovery has been probably late arrived. Worried by the harsh poverty of rural inhabitants, in the search of efficiency, development economists with the help of programs for development have certainly achieved to dismantle these social structures.
Polanyi claimed for historical considerations about peasants' origins, ethos and customs. The claim of economic anthropologists was not a refuse of development and growth for rural peoples, but on the features and historical trends that development economists should consider. Early, anthropologists recognized that "change in primitive economic process means inevitable change in social organization"[26], encompassing religious, kinship and political organizations. But Polanyi emphasized that markets as nowadays they are understood have not existed before our current western civilization:

> "*No society could, naturally, live for any length of time unless it possessed an economy of some sort; but previously to our time no economy has ever existed that, even in principle, was controlled by markets*"[27].

The distinction is clear: while economists are interested in the transformation of the economic situation of rural communities, and find obstacles in the social forms that impede an efficient economic behavior,

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[26] Dalton 1962, p.361.
[27] Polanyi, Chapter 4. The Great Transformation.

anthropologists were interested in the cultural and social changes brought about from the integration of those communities into the modern way of economic relationships. The vision of anthropologists highlights the social and cultural impacts that the transformation into economic men of peasants and primitive communities, brings about to the social structure. This aspect of development is hardly realized by economists.

Peasants Motives and Rural Development in EA

Among the wide set of implications and discussions provoked by the view of economic anthropologists, our basic interest is to consider the insights about the motives of the peasant as economic actor. This view indeed offers some insights about the motives.

Karl Polanyi and other economic anthropologists showed the social organization of rural communities of Africa and Asia were embedded on traditional modes of production, acknowledged as *subsistence* production[28]. According to the view of economic anthropologists, rural communities differ from western communities, since their focus is not on maximizing income, growing on wealth or becoming specialized units for work; just for having a living within the community. Dalton (1962) characterized the economic structure of rural communities of Africa and Asia by the absence of market dependence, differences in the allocation of factors of production, work arrangement and disposition of products, reciprocity and redistribution. They were poor but with high

[28] (Dalton, 1962, p. 361).

social cohesion.

But according to these characterizations, on which tenets peasants aimed to live under the rule of social structures? One shortcoming of economic anthropologists is they do not provide a normative approach to consider rural development, beyond warning the social tissue present in rural communities. They call for the consideration of the internal structure of rural settings, and warn the negative impact on these structures policies inducing rural actors to compete. They didn't provide either an explanation for the existence of these arrangements, or the influence of economic factors.

However, the description of the economic behavior of peasants show economic anthropologists were aware of an economic environment plenty of institutional arrangements. Economists use to consider the economic motive of social and cultural patterns. Today we know that these arrangements have an economic motive: sharing risk and assimilating idiosyncratic shocks.

Development economists seem right when consider necessary the enhancement of rural institutions. But the investigations of economic anthropologists confirm that less ambitious, the objective of these arrangements is the securing of a smooth consumption, as nowadays economists use to consider strategies for coping with risk.

The contributions of economic anthropologists were disregarded and hidden by the political interest of promoting development, and the worth of the knowledge provided by their research was sketched and

criticized as ideological and noisy for development. Anthropologists were tacitly accused of presenting the peasants as irrational actors.

2.2.3 Peasants' Rationality

The discussion of the economic rationality of peasants was relevant in the debate among development economists and anthropologists. The affiliation of peasants to social norms in charge of the economic distribution of the livelihoods was seen as an irrational behavior.

For the discussion of development as the objective of all economic actors, economic anthropologists were accused to defend the irrationality of the peasants. Within the economists' jargon, the approaches to the rationality of peasants are known as objectivists and substantivists, to denote those who consider peasants are rational and those who argue peasants are economic irrational. The vision of Polanyi about the economics of peasant communities seems caricaturized under the expression "substantivists".

But the sketch ignores the historical origin of the subject of the economic rationality. As far as the literature about rural development of the beginning of the 20th century allows observe, the discussion in economics about rationality has its origin in the incomprehensible behavior of peasant and primitive societies interacting with western people. Von-Neumann and Morgenstern formulated a technical definition of economic rationality within a game-theoretic framework. But the ex-

pression bears a disdainful connotation with earlier origins. This nuanced use of the term is still found in some papers of the 70's[29].

The nuance is not accidental, but a consequence of the western vision of African, Asiatic and Latin American communities. Indeed, the concept of rationality emerged as a problem as western merchant demanded goods and inputs of tropical regions at competitive prices. Other scholars observed *"peasant values*" as obstacles for innovation[30]. The problem of peasants' rationality emerged from the challenge of transforming those primitive and peasant communities into the western economy.

2.3 Descriptive Theories and Peasants

A conjugation of factors led the analysis of peasants' households to a different direction, beyond the philosophical and ideological discussion. The interest of the Marshall's plan in the development of the third world, gave way to normative theories for development. Moreover, the advances of the economic theory with the formalization of the economic behavior in the model of the utility, induced to consider for the first time the evaluation of the economic behavior of the peasants in terms of efficiency. These advances also led scholars to formalize risk behavior, and to include it in the modeling of the peasants. On descriptive issues, during the 40's economists started to work in what today is known as the new institutional economics.

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[29] Waters, 1974
[30] Dodson, 1962; Bose, 1962.

The normative trend on development culminated in the works of Theodore Schultz and other development economists, while the utility model gave support to theories of risk aversion and hypothesis like the permanent income. At the end of the 60's, on descriptive issues Arrows and Pratt, and before Friedman and Savage; and the new institutionalism, had set the foundations of the research agenda of development economics started at the 70's. On normative issues the path showed an odder panorama. On one side theories for development had failed, but on the other side the works of Schultz and others sold the idea that peasants are rational but their means make them inefficient. Put into another way, the theories supporting the development of the third world failed but development economists strengthened the idea that peasants are developmentalist actors.

2.3.1 The Work of Milton Friedman on Risk and Consumption

The works of Milton Friedman have guided practically all the subjects of the modern investigations on peasants' microeconomics. His works on risk provided the foundations for the theory of relative risk aversion of Arrows and Pratt during the 60's. From the 70's until today, the research agenda on peasants' microeconomics has in risk a central element. Late, during the 80's his works on consumption associated to his hypothesis of permanent income, became a reference for studying one of the stylized behaviors of peasants: the smoothing of consumption. Today, the analysis of peasants' economies turns around two aspects first worked by Friedman: the smoothing of consumption and risk sharing. Indeed, smoothing consumption and risk sharing are central elements of the survivor nature of the peasants.

Risk

In a seminal article, Friedman and Savage (1948) unified the analysis of utility and risk. The attitudes toward risk were shown to be a consequence of the curvature of the utility function. From this curvature, three types of actors were recognized: risk–averse actors with concave utility functions, risk neutral agents with non curved utility functions, and risk lover agents with convex utility functions[31].

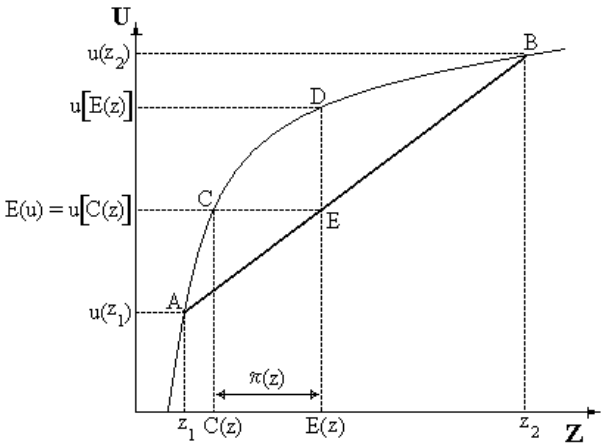

Figure 3. Risk Aversion (Adapted from CEPA, 2007) [32]

The relationship between the attitudes toward risk and the concavity of utility function can be presented from the above figure showing the case of a risk–averse actor. If the independent variable Z is assimilated with a stochastic income, with higher levels of income more un-

[31] For readers not familiarized with utility functions, the reading of Appendix 1 is encouraged.
[32] Detailed information of the theory of risk aversion can be found in http://cepa.newschool.edu/het/essays/uncert/aversion.htm

certain than low levels, risk–averse agents will obtain the highest marginal benefits at low but certain levels of income. Risk–neutral actors are indifferent to risk since the marginal benefits of risky choices are similar across Z. Risk–lover actors have the highest marginal benefits at high but more uncertain income. For risk–averse actors, points C and E show the average utility $E(u)$ of an average income $E(z)$, is the same utility $u[C(z)]$ corresponding to a lower but more certain income $C(z)$: risk–averse actors are willing to pay a premium risk $\pi(z)$ for a lower but certain level of income[33].

The work of Friedman made evident that risk matters for economic decisions. Risk is particularly pervasive in rural economies. Peasants weigh risk at every level, since their economic performance strongly dependent of weather in agriculture, on the variability of agricultural

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[33] This formalism demands some comments and precisions. For a comparative static analysis, it is assumed that preferences are given. This assumption required for the analysis of how the actor allocates efficiently her resources, and how she reallocates her resources regarding changes of exogenous factors, is not necessary for a temporal analysis. Preferences change and consequently, attitudes toward risk change also. Yet, economists use to consider that attitudes toward risk are derived from inner fixed preferences.

Additionally, the economic theory assumes that the behavior of the economic actor comes from her preferences. At this respect, if an economic actor shows she is risk–averse, it is considered that in all her actions she will choose lower but safer incomes.

A third remark is important for our further discussion. The usual economic analysis involving risk is made for utility functions of money. In other words, the variables that define the level of satisfaction depend on markets. The need to express utility functions in terms of money comes from the need to provide a common basis in which the efficiency of choices can be evaluated: activities for which there is no market cannot be directly valued. This was a very basic fact that didn't allow the analysis of rural economies in which there is no markets for some of the economic factors –variables–. For example, if unemployment is pervasive and severe, labor cannot be evaluated in terms of market wages. This situation has been partially solved with the come up of the concept of shadow wages.

prices, and from the transaction costs derived from a weak presence of the state. It does not surprise to acknowledge that scholars have had very good reasons to consider peasants as risk–averse actors. In fact, the unexpected behavior of peasants was attached to risk–averse behavior.

The theory of risk aversion of Friedman and Savage bore some shortcomings. In particular, it has stood the intuition that inner attitudes are not sufficient to grasp actual risk behavior. It is possible that beyond inner attitudes, some economic factors can influence the actual behavior. As it will be seen, these shortcomings were partially worked out by the theory of relative risk aversion proposed 15 years later by Arrows and Pratt.

Consumption

In 1957 Milton Friedman published "A Theory of the Consumption Function" under the Permanent Income Hypothesis (PIH). He argued that economic actors base their levels of consumption on their expectations about future trails of and not on current income, as proposed by Keynes within his consumption function. The relevance of the PIH is nowadays accepted by the persistent smoothness of the consumption accompanied by the uncertainty of the income, observed for rural villages (Murdoch, 1995).

According to the PIH, changes in consumption levels are produced by changes in the PI, and not only changes on the present income. This behavior is actually observed in rural villages, though there the concept of income doesn't grasp the entire set of economic activities with

which the peasants obtain all their livelihoods.

It is also known for peasants, that they deploy spatial and temporal strategies for securing a smooth horizon of consumption. All these features of peasants' economies require a broader approach than that offered by the PIH. Yet, the PIH points out economic actors including the peasants care strategically their consumption.

2.3.2 The Safety–First Rule of Roy

In 1952 Roy's work attempted to conciliate the utilitarist approach and the insights provided by Friedman and Savage about risk, with the observed reluctance of peasants to respond positively to high prices or new technologies. Roy proposed a model in which the peasants don't attempt to maximize the utility, but to minimize the probability of disaster. Peasants maximize their utilities by minimizing the variance of the sources of income. He argued, to maximize Utility, peasants minimize the risk of failure. As Shahabuddin et al. affirm, peasants do not want to maximize their utility functions, but *to maximize their chances to survive* (1986, p.123).

According to Roy, peasants follow known and fixed strategies in order to acquire their livelihoods in a safe way. Roy's hypothesized that peasants follow fixed rules and disregard other economic options. This is what late became to be known as the "*safety first rule*". Under the safety–first rule, it is considered all the strategies deployed by peasants are fixed strategies, like institutional mechanisms, to achieve a fixed, low, but safe level of consumption. Peasants as risk–averse actors develop conservative strategies viewed as rules for safety, to max-

imize their chances to survive. The safety–first rule becomes a predictive theory of peasants' behavior.

The safety–first approach asserts peasants are not concerned with growth, but with securing a fixed and stable, though many times precarious, consumption. The safety–first seems to fit with the survival motive. It stresses that peasants become satisfied if they reach the minimal but safe consumption; in more modern terms, if they secure a smooth horizon of consumption.

The analysis of the safety–first rule seems convincing at several instances. The safety–first rule seems to encompass features of rural economies. If peasants follow fixed rules to secure their basic needs, it explains their rejection to new technologies, or the adoption of new more risky but more profitable crops. The safety–first rule became a reference for the discussion of peasants' motives and behavior[34]. Some authors considered the safety first behavior as typical of peasants, and argued, it is a rational outcome (Scott, 1976).

Shortcomings

Yet, this approach received several criticisms. It was theoretically questioned (Wiens, 1977) and experimentally rejected (Binswanger, 1982; Shahabuddin et al., 1986). Wiens (1977) criticized the interpretation of a certain minimal consumption, because *"If one accept this, one must be prepared to argue that farm employers and landlords act in collusion*

[34] See for example Scott, 1976; Moise, 1984.

with farm laborers and tenants to maintain a wage level that is higher than would be determined by competitive equilibrium" (p.48). As pointed out by Wiens, the consequences of this approach are untenable. In an economic world ruled or at least influenced by competition, there are no chances for such collusion. There is additionally no factual or institutional evidence of this collusion. Beyond the theoretical discussion, Binswanger (1982) and Shahabuddin et al. (1986) rejected experimentally the hypothesis of safety–first rule. They proved it doesn't predict peasants' behavior. After these late works, the safety–first rule was abandoned and the utility model of the maximization of a utility was adopted definitively.

The reasons for the failure of the safety–first rule can be found in the assumption that peasants follow fixed strategies. The bet of the safety–first rule was to predict actual peasants' behavior, but as a predictive theory it relies on two very restricted assumptions. The first assumption is that peasants are steadily risk averse. There are very good reasons to believe that peasants are risk averse, but in reality they have shown at many instances they behave as risk neutral or even as risk lovers[35]. The works of Binswanger (1982) and Shahabuddin et al. (1986) that rejected the safety first rule, showed not only the shortcomings of the hypothesis, but the difficulties of the utility model to grasp the entire set of responses of peasants. They found a discrepancy between the assumption of risk aversion of the utility model and actual outcomes. These works showed that peasants may reveal aversion

[35] As it will be presented below.

toward risk in games, but the same peasants play risky choices in the real life.

Even more restrictive, the safety–first rule assumes that peasants don't leave out of fixed rules. It not only assumes that peasants are willing to act inefficiently by their aversion toward risk, but additionally they follow a fixed pattern of behavior. Put in other words, among the set of choices that would keep them as risk averse, they reduce their possibilities to those options that they know well. According to the safety–first rule, they almost don't make choices. But they do. These two assumptions seem very restrictive for shaping properly the actual behavior of actors that certainly have to cope with risk, and adapt to a changing environment. It seems, the safety–first rule failed because it betted to predict actual peasants behavior with very restrictive assumptions.

Contributions

Though the shortcomings of the safety–first rule made it invalid, some aspects of the actual motivation of the peasants are present in this approach. An important contribution of the safety–first rule is that it takes into account the inherent risk of rural economies and the impacts of risk in the economic prospect of the peasants. Risk understood as the variability of the outcomes producing livelihoods, is at the center of the analysis. This insight about risk was resumed 20 years later and dominated the research agenda of development economics, from the 70's until today.

But the safety–first rule also accounts for the survival motive. If pea-

sants look for a minimal and safe level of consumption, its behavior reveals that they don't pursue development but survival. The safety–first rule converges risk with the survival motive.

2.3.3 The Theory of Risk Aversion of Arrows and Pratt

As heritage of the nineteenth century, the economic theory assumed preferences as fixed and ordered[36]. Later, the concavity of utility functions as defined by Von Neumann and Morgenstern proved to be a sufficient condition for consistency with the axioms of preferences[37]. Beyond Friedman's contribution in the characterization of the preferences toward risk from the concavity of utility functions, a further attempt to bind attitudes toward risk and risk behavior was made by John Pratt (1964) and Kenneth Arrow (1965), who proposed *functions* for Absolute (ARA) and Relative Risk Aversion (RRA):

$$ARA = r_u(u) = -\frac{u''(x)}{u'(x)} \qquad (1)$$

$$RRA = xr_u(u) = -x\frac{u''(x)}{u'(x)} \qquad (2)$$

[36] As presented by Edgeworth, Antonelli and Pareto.
[37] Completeness, transitivity and continuity.

These functions depend on the curvature of the utility expressed in the derivatives, and on a characteristic that does not depend on the utility of the actor, but on her welfare (x). Put in another way, Arrows and Pratt acknowledge that actual risk behavior is not only a function of inner attitudes toward risk, but on another factor. Yet, this factor, her welfare, is still under the control of the actor. The proportionality between RRA and the level of welfare (x) states that as welfare grows, the Relative Aversion toward risk increases.

The ARA function was proposed to account for agents that "*would feel they ought to pay less for insurance against a given risk the greater their assets*" (Pratt, 1964, p. 123). The RRA function states that the aversion to risk is proportional to a variable x, initially understood as welfare. These functions state that actors with high levels of welfare are willing to take infinitesimal risks. Additionally, these functions assert that as the risk grows, these actors are willing to reject risky choices, in order to preserve their status.

This behavior has been widely acknowledged for the economic actors, including wealthier peasants. However, how a function of RRA depending on welfare couldn't grasp the behavior of rural actors whose wealth is exiguous? Keynes had at 1953 acknowledged that Indians had a propensity to liquid assets at expense of productive assets[38]. He considered this propensity went against the possibilities for development but played as a precautionary measure against risk. This behavior cannot be either grasped by the theory of Arrows and Pratt. Since

[38] Jalan and Ravallion, 1978

the function of RRA asserts that the economic actor preserves her welfare from risk, how to understand the behavior of an economic actor willing to sacrifice her assets for liquidity? It would be sensible to assert that once a poor peasant becomes wealthier her stylized behavior would be closer with the predicted by Arrows and Pratt. But what would happen meanwhile with the great majority of economic actors characterized by the lack of minimal assets?

Additionally, Arrows and Pratt make clear just at the beginning of their works these theories are for utility functions of money. Beyond the technical requirements that this remark want to fulfill, it is clear that their analysis presume implications based on the perfection of markets as the basic normative. Choices implying risk, and other issues like insurances that are at the center of this theory, suppose the wide existence of markets. The remark on utility functions of money is in other words the assumption of the existence of markets in which all the decisions are valued in terms of money. But, what are the implications for the analysis of actual risk behavior for economic actors with pervasive holes? Which variable would have to be included if welfare is impeded to provide flows of income? How to weight risk behavior is not all the economic activities can be translated into money units, or this translation does not inform on actual decisions, regarding the imperfection of markets?

The question is not about the reliability of the theory of Arrows and Pratt. It is sensible to imagine an economic actor holding certain welfare, and additionally this welfare produces income, is averse to risk, proportional to her possessions. The RRA of Arrows and Pratt would account for the actual behavior of these actors. But which factors rule

the economic behavior of actors without welfare? Which comprehensive framework holds the stylized behavior of peasants?

The theory of Arrows and Pratt was adopted for the analysis of peasants' behavior. To overcome the technical difficulties, economists opted for describing risk behavior in terms of consumption, rather than wealth[39]. Both the concavity of utility functions as a manifestation of inner attitudes toward risk, and the functions of risk aversion, emerged as the cornerstones for the research on risk in rural settings.

The adoption of the theory of Arrows and Pratt owed a more careful consideration of the differences in the economic behavior brought about by the differences of structure between rural and urban economies. It is cumbersome just to replace consumption for welfare as the variables of RRA, to facilitate the analysis of rural behavior under the theory of relative risk aversion. Probably due to this assimilation of the theory of relative risk aversion, and to the lack of new approaches, many important facts characterizing peasants' behavior have not been satisfactorily explained. These particularities don't rest merit to the insights provided by Arrows and Pratt.

2.4 Peasants and Development

The works of Von Neumann and Morgenstern, Friedman, Savage, Roy, Arrows and Pratt, constitute the more relevant advances in the theo-

[39] See for example Sen (1966), Sandmo (1970), Levhari and Srinivasan (1969), Rosenzweig and Wolpin (1983), Rosenzweig (1980), Murdoch (1995).

ries aimed to describe peasants' economic behavior. But between the 40's and the 70's there was also a fruitful come up of normative theories for development and an impetuous support to those theories by development economists. The most important contribution at the economic level is due to Theodore Schultz. His studies convinced that peasants are rational actors, and that they demand a transformation of the economic structure of agriculture for development.

The welcome of Schultz' work not only closed the polemic in favor of development economists against the economic anthropologists, but overshadowed the contributions of other scholars like Georgescu Roegen, who claimed for policies close to those claimed by A. Chayanov and to the survivor peasant. Before discussing Schultz' work, let summarize very briefly the Georgescu Roegen's ideas.

2.4.1 The Claims of Georgescu Roegen

In 1960 Georgescu Roegen[40] called for a theory of peasants' economies, under similar regards of A. Chayanov and development anthropologists. He disagreed with the Marxists' vision of peasants but also claimed the inability of the –he called– standard economic theory for grasping the features of peasant economies: absence of capitalists' institutions, no markets and search for subsistence and not for wealth (p. 4–5). Georgescu Roegen focused on the role of the peasant sector in economic development. He claimed for an Agrarian doctrine, whose two main features were (pp. 33–34):

[40] Economic Theory and Agrarian Economics.

"1. Because of their geographical situation some communities will always rely on agriculture as a main economic activity. And since agriculture is an intrinsically different activity from industry, such communities cannot develop along identical lines with the industrial economies.
2. For the countries with an agricultural overpopulation, individual peasant holdings and cottage industry constitute the best economic policy."

2.4.2 Theodore Schultz and the Optimizing Peasant

The father of the modern approach for rural development in economics is Theodore Schultz. His work was already acknowledged before the 50's though his book published in 1964 is usually taken as his reference. The book's title informs the task he tackles is "*Transforming Traditional Agriculture*". Schultz's work is contextualized by the green revolution (1940–1960) and the trails of the Marshall's plan, that gave impetus to the problem of peasants' development. His contribution to the discussion of peasant development has largely influenced both positive and normative undertakings. It prevailed as the mainstream in economics, by leaving aside the discussions set by Polanyi and other economic anthropologists.

The *transformation* of traditional agriculture plays as a response to the vision of tradition and cultural forms defended by anthropologists, or the understanding of rural economies as different from capitalist economies, as stressed by Chayanov and Georgescu Roegen. The works of Schultz and other development economists encompassed a criticism on the suitability of "subsistence" to characterize rural households, because it "can lead to major errors in the theory of behavior of small–scale producers in developing countries" (Miracle, p. 144). Miracle ac-

knowledged the change of the vision of peasants' households from subsistence units into small farmers, mostly from the works of Schultz, Boserup and Mosher. The interest became the change of production and productivity.

Theodore Schultz channeled the problem of peasant development in an economic framework. According to Schultz, the economic analysis plays as an instrument against political creeds about rural economic agents. He argued that peasant households are rational and efficient units: they operate at the optimal levels according their resources. He consequently defended the rationality of peasants. His position intensified the discussion about the rationality of peasants, and as counterargument some authors showed negative supply responses to increases of demand[41]. Yet, the central argument of anthropologists like Polanyi was not the rationality of peasants, but principally the different structure of the rural world and the consequences of developmental policies inducing a western way of living[42].

An aspect of Schultz' doctrine[43] is the role of prices in the transformation of agriculture. A high price of one commodity relative to other commodities' prices would finally induce its production. For policy design the implications are straightforward: if rural actors are rational, price incentives and improvements on productivity are the basic instruments to overcome rural poverty. Schultz's book proceeded from a diagnosis to a general strategy for transforming traditional agricul-

[41] See for example Adams (1982).
[42] See The Great Transformation of Karl Polanyi.
[43] stressed by K. Boulding (1947, p. 438)

ture. The diagnosis of Schultz, from which the transformation of traditional agriculture should take place, based in three points (p. 29–30):

"i. the state of the arts (technology and practices) remains constant.

ii. the state of preferences and motives for holding and acquiring sources of income remains constant, and

iii. both of these states remain constant long enough for marginal preferences and motives for acquiring agricultural factors as sources of income to arrive at an equilibrium with the marginal productivity of these sources viewed as an investment in permanent income streams and with net savings approaching to zero".

The rationale can be presented as follows. Traditional agriculture is efficient: peasants obtain the maximal benefit of their activity. Other options for earning additional income do not represent real incentives. Additional investments on traditional forms of production do not provide significant increments on income. Therefore, traditional agriculture though efficient reproduces stagnation. From this diagnosis, Schultz proposed three basic questions to be addressed:

i. The possibilities of rural communities to increase substantially their production by an efficient allocation of the agricultural factors;
ii. The key agricultural factors responsible for the highest marginal productivity and
iii. The conditions for incentive investment in agriculture.

The factors that can overcome stagnation of traditional agriculture

demand investments on new forms of production, for higher marginal benefits, and investments on human capital. Policies based on price incentives with investment on human capital and green revolution technology were the basics to trigger rural development.

Schultz's work received great acceptance among development scholars mostly because it provided a theoretical support for the theories of development, appeared during the fifties (e.g.. Jorgenson, 1951; Lewis, 1954) very trendy during the 60's. Indeed, Schultz' book was presented as an argument against both the subsistent peasant of Chayanov, and the claims of economic anthropologists. Both the vivid controversies of Polanyi about the impact of the market society on the cultural and sociological tissues in the rural world, the arguments of Chayanov about the coexistence of two different economic worlds or the Georgescu Roegen approach, all they disappeared after the view of the *optimizing peasant* of Schultz gained acceptance.

After the 60's these theories loose force. Yet, the notion that peasants act rationally remained, as well as the conviction that peasant's economies can be transformed. An important legacy of Schultz' work is the idea that peasants are rational. The theories of development loose force, but the idea that peasants are rational consolidated. At the end of the 60's there was a generalized conviction that peasants are economic men at least in Africa, and that *"the same conclusions can be ex-*

tended to Latin America and Asia'[44]. The defense of the rationality of peasants and that they respond to economic incentives, constitute the main outline of what is actually known as the *optimizing peasant*, a term used by other authors of the epoch[45].
However, the image of the optimizing peasant not only expresses the idea that they are rational, e.g.. that they act for maximizing their utility functions. It also encompasses a more questionable notion that they participate in the development process, and that they pursue development. At this respect the economic program of Schultz is very convincing. Indeed, this program is still attempted, though without success. This program is the most refined version at the policy level of what should be done for development.

The image of the optimizing peasant encompasses the assertion that the peasants hold development as their central motive, e.g.., that they pursue growth in wealth. At the end, Schultz and other development economists[46] propose that peasants have to be regarded as farmers. This implies that they maximize some kind of utility function by maximizing profits.

The program of Schultz can be acquainted as the dream of development economists and scholars committed with the progress of poor peasants. Unfortunately this program failed during the 60's and Schultz died without seeing his dream made reality. This program is

[44] Miracle, 1969, p. 146
[45] Lipton, 1968
[46] Mellor, 1966; Mosher 1966

still intended but still fails, in spite of further advances. Is it not time to ask if this program is realizable?

2.4.3 Peasants in Theories of Development

The economic literature of the sixties revolved around new theories[47] and models[48] of development based on the dual model of development of Lewis (1954) and other works like Jorgenson (1951)[49]. In the Lewis' model, "*the underdeveloped economy becomes developed at expense of a change from the agricultural sector in favor of the industrial sector*"[50]. The enhancement of the industrial sector demanded labor. A first inquiry was about the possibility of supplying this labor from agriculture. Two visions appeared. Some authors argued the existence of a labor surplus in the rural sector[51]. Under this hypothesis, the supply of agricultural labor could be reduced without negative impacts on the agricultural output. The rural labor surplus appeared as a disguised unemployment[52] that could be assimilated by the industrial sector. A shift of labor to the industrial sector would bring about a raise of rural wages. In contrast, Schultz and Jorgenson (1951) considered that the marginal productivity of agricultural labor was close to zero and hence, the shift for industrialization would be only possible at expense of a reduc-

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[47] See Johnston (1970) and its references for a general survey on theories of development.
[48] Zarembka, 1969.
[49] Examples: Ranis and Fei, 1961; Enke, 1962; Ranis, 1962; Wellisz, 1968; Berry, 1970; Myint, 1965; Sen, 1966.
[50] Ranis and Fei, 1961, p. 534.
[51] Sen, 1966.
[52] Enke, 1962a; Paglin, 1965; Neher, 1966; Jorgenson, 1967; Wellisz, 1968; Guha, 1969; Berry, 1970; Sen, 1967; Berry and Soligo, 1968.

tion of agricultural labor[53]. Hence, development demanded the transformation of traditional agriculture to compensate the labor drawback. More critic, Dubey (1963, p. 702) considered that an increase in productivity "*is not enough to support industrial development and investment in underdeveloped areas*".

If the process of development assumed a necessary shift of rural–urban labor, the raise in the productivity of agriculture could be induced by strategies that complement price incentives and technological transformation of the rural farm. Hence, the theories of development demanded to test the responsiveness of peasants to price incentives. Some authors found that peasants respond to price incentives[54], and some others that they don't[55]. Moreover some authors reported negative supply responses to price incentives[56]. Peasants were not only impassive to price incentives: they decreased the supply of food crops under high prices.

How to understand the negative supply response of peasants? A positive supply response informs the peasants' position for participating in markets to earn profits. But, what the peasants do with money if the markets for substituting the sold out food cannot be reached? The lack of responsiveness and the negative supply response reflects the fact that peasants are forced to store food from the inexistence of markets

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[53] See Sen, 1967 for a critique.
[54] Bauer and Yamey, 1959; Falcon, 1964; Hogendorn, 1967.
[55] As for example Stern, 1962.
[56] Bardhan, K. (1970), Nowshirvani, (1971).

for substitutes. Peasants act optimally as consumers by preparing them to face the scarcity produced by the demand's raise[57]. What defines the motives of the peasant is not his desire for development, but the pervasiveness of the imperfection of markets. This discussion will be resumed two chapters forward.

The setting of the foundations for the description of the survivor peasant closed with the decline of the theories of development at the end of the 60's[58] [59]. At the seventies, scholars turned their interest into the exploration of risk and rural institutions. At the end, the underlying interest on institutions relates to a more general concern on the influence that risk plays in peasants' decisions, in their performance, and in the arrangements set in rural communities to cope with risk and uncertainty. Institutions are economic responses to risk and uncertainty.

2.5 Chapter's Summary

The next table summarizes the evolution of ideas about the peasant as economic actor that ruled the discussion of scholars since the beginning of the 20th century up to the height and fail of the theories of development, at the 60's.

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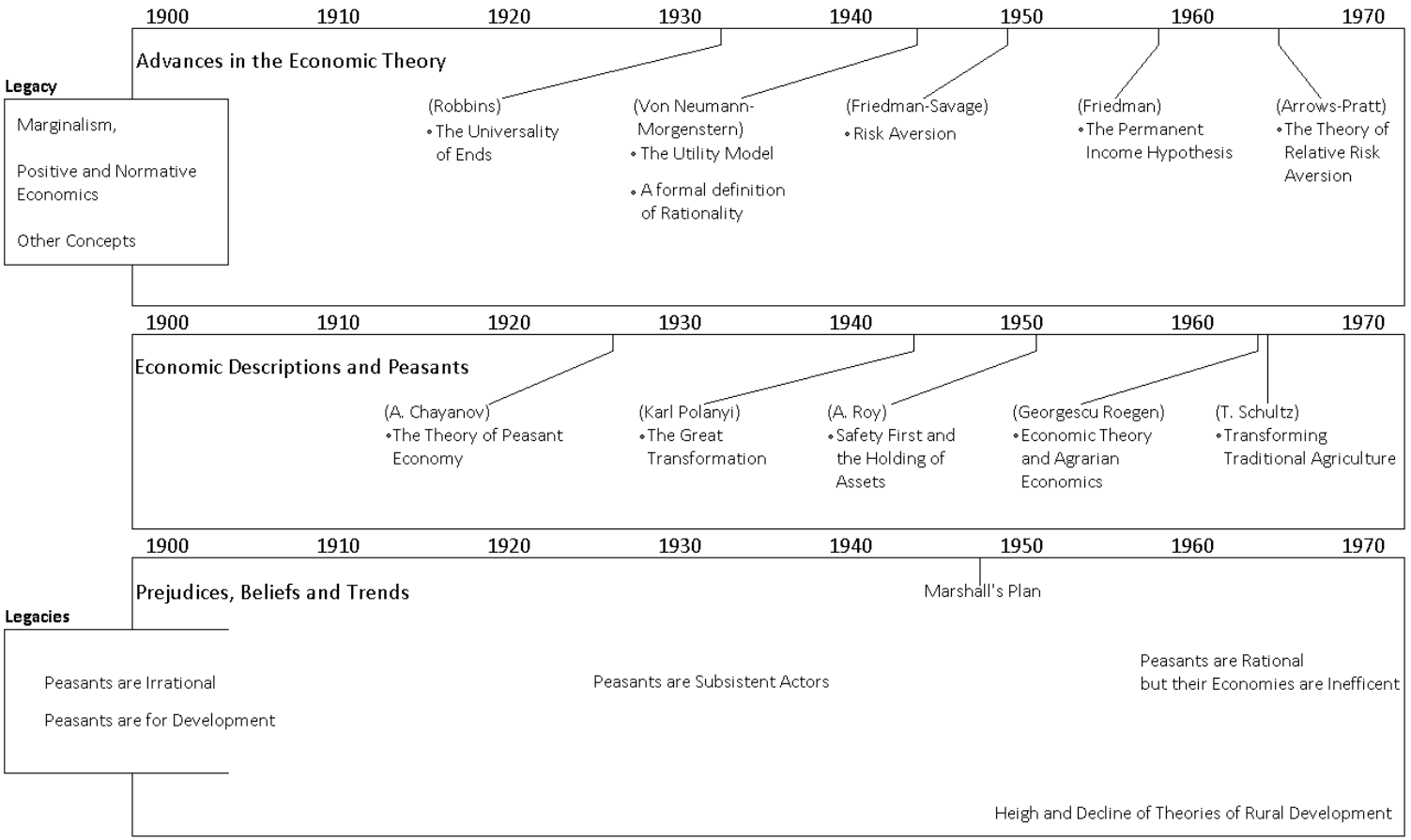
[57] As it is shown by Nowshirvani(1971).
[58] During the seventies few papers were concerned with topics of the sixties' fashion like dual economy and labor surplus. Dixit (1971) treated the short run equilibrium and shadow prices in the dual economy.
[59] The end of the debate about rural surplus seems due to Hamilton (1975) who showed that under risk aversion, the necessary condition for labor surplus, e.g.. the constancy of the marginal rate of substitution between income and effort, doesn't hold.

Table 2. Development of Economics, Normative Trends and the Description of Peasants



3 THE RISK–COPING PEASANT (1970 –)

This chapter shows the advances in the understanding of the economic behavior of the peasants from the study of risk. This study covered well differentiated aspects: the economics of rural contracts, the characterization of attitudes toward risk of peasants, the influence of risk aversion at different instances, and the study of the great variety of temporal and spatial strategies for coping with risk. This chapter also shows that the recognition of the determinant role of risk created the notion of peasants as risk–coping actors, turning development into an ulterior motive. Yet, the researches in risk showed that the strategies for coping with risk are indeed for smoothing consumption, the cornerstone of the survivor behavior.

3.1 New Courses and Inertias

As Stiglitz noticed (p. 19, 1989) and it is evident in Schultz' work, development economists of the 60's used to consider rural development depended on the reinforcement of some economic factors. This idea was present in the discussion of the first years of the 20's century, in opposition to the idea of peasants as irrational actors. The research of the 60's favored the economic factors at expense of irrationality of the peasants as the key for rural development. Yet, at the end of the 60's programs based on the enhancement of the economic factors failed, and development economists were encouraged to studying the structure of rural economies in more detail.

This change led to the study of risk in rural economies, at several instances: contracts, peasants' risk aversion, determinants of risk aversion, economic impacts of risk aversion, and risk sharing. Both the theories of risk aversion of the 60's, the insights gained with

those studies, and the progression of theories of asymmetric information during the 70's and 80's, brought about a refined language[60] that grasped some basic concerns of the household, and created a new picture for describing the rural actor: *the risk–coping peasant*[61]. It stresses that peasants engage in coping with risk.

The risk–coping peasant didn't come up as counterpart of the optimizing peasant pursuing development. While the immediate goal of the rural household became to cope with risk, development turned as the ulterior goal. The realization of a different objective of the household could suggest it owed a more careful consideration of the motives. But an inquiry of any other motive was unlikely at the beginning of the 70's. Beyond the impetus of the movement for development that would have refused to consider other motives, the chronology of the risk–coping peasant explains the remaining of development as the ulterior motive and its coexistence with risk coping.

Indeed, the notion of peasants as risk–coping actors didn't emerge immediately after the interest on risk came up. It began to be used later (e.g. Alderman and Paxon, 1992). The idea of peasants as risk–coping actors is the synthesis of the acknowledged behavior of the rural households from the overall influence of risk.

Regarding the survivor peasants, the study of risk in rural econo-

[60] Expressions like *coping with risk* and *smoothing strategies* are representative of the language created by the risk coping rationale.
[61] Ellis, 1998.

mies brought about two new elements. One is the difficulty to sustain development as the economic motive of the peasants. Since development gave way to risk coping as the immediate objective of the rural economy, the new reasoning became that peasants cope with risk *for* development. This new reasoning is easily recognized in the justification of papers exploring different aspects related to risk in rural settings. But the relationship between risk–coping and development are more and more apparent, because the strategies for coping with risk indeed are not *for* development.

Coping with risk does not lead to development; it just enhances the possibilities of the household to survive. For instance, optimal risk sharing in rural areas does not lead to development, but to a reduced vulnerability. Peasants cope with risk in a stylized way. They cope with risk raising the share of liquid assets, storing food when prices are high, cropping resistant rather than profitable crops, etc. Strategies for coping with risk enhance the household for facing an oncoming and uncertain cycle with a more secure horizon of consumption. Development as an aggregated process of reinforcement of markets and growing the individual wealth is not enhanced by the success of coping with risk. It may be argued, risk sharing reinforces development *indirectly*. But posed in these terms, the discussion looses economic consistency and abandons the concern on what is priority, typical of policy analysis.

With the increased interest in risk in rural economies, the usual aspects directly related with development have lost momentum. There are no discussions about how to make them more productive or how

to introduce new technologies more effectively. Nowadays, the interest is how to enhance social arrangements for sharing risk[62].

The second element brought about by the risk coping peasant is the smoothing of the consumption, discovered as one more strategy for coping with risk. Scholars of the 90's became aware of the persistent smoothness of the consumption in spite of the high variability of the income. This contrast created the smoothing consumption puzzle, since it was granted that all the strategies including consumption smoothing are for coping with risk. They indeed discovered the key element around which the survivor behavior is deployed. Peasants are survivor actors because all the strategies around risk are for securing a smooth horizon of consumption. It is increasingly acknowledged the so–called risk coping strategies are in reality for smoothing consumption[63]. Some authors already talk about the *consumption smoothing motive*[64].

3.1.1 The Subjects of Study

This chapter presents the risk coping peasant. The chapter follows with a depiction of the research on sharecropping contracts, developed during the first part of the 70's. Since risk is the key concept of the discussion, a brief comment of how the concept of risk has been

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[62] See Fafchamps and Lund (2002) for the state of the art in risk sharing.
[63] Eswaran–Kotwal (1990), Nguyen (1998, p.19), Alderman and Paxon (1992, p.2), Fafchamps (1999, p.40, p. 71), Fafchamps and Kurosaki (1997), Rosenzweig and Wolpin (1995, p.228).
[64] e.g.. Fafchamps and Korosaki 1997, Nguyen, 1998.

used in peasant economics is required. Then, a synthesis of the research on attitudes toward risk is presented.

These investigations propagated the notion of peasants as risk–averse actor, though they also revealed the difficulty of the theory of risk aversion to grasp actual risk behavior. In many cases, peasants revealed risk–averse preferences but behave as risk neutral or risk lovers! It will be argued, theses inconsistencies emerge from the misconceptions on risk, and from the lack of a theoretical approach for the survivor actor.

After surfing the researches in risk attitudes, the chapter explores studies focused on the determinants of actual risk behavior. Scholars found actual risk behavior depends on some variables different to inner preferences and welfare. These findings suggest the need of theoretical approaches able to grasp actual risk behavior.

At the 90's the research on informal institutions opened a new way that led scholars to discover both the smoothing of the consumption and risk sharing. The nowadays agenda of research focuses on risk sharing. A summary of these researches is presented.

As a synthesis, the chapter ends with the presentation of the rationale of risk coping. The analysis of this rationale shows how the survivor motive is hidden by the autarky conceded to risk, but also serves to show that, in order to account for the survivor actor, it is just needed to consider the smoothing of the consumption is not a means to cope with risk, but the overall objective of risk coping.

3.2 Rural Contracts

Rural contracts are institutions. The importance of rural institutions, that is what it is instituted in rural areas, was acknowledged by anthropologists earlier (Keyfitz, 1959)[65], and is deeply rooted in the anthropological research of the first part of the 20th century. Yet, the institutional aspect that captured the interest of scholars at the beginning of the 70's was the pervasive type of land tenure contracts in rural areas. During the 70's, sharecropping was the most studied institution[66], motivated by one paper of Cheung (1968). The pervasiveness of sharecropping contracts initially regarded as inefficient was addressed from the influence of uncertainty[67], and the imperfection of markets[68]. Other authors considered the problem of transaction costs[69] and property rights[70] for explaining the existence of such contracts. After some authors argued for the efficiency of sharecropping contracts[71], the question turned to the analysis of different patterns of sharecropping[72] or its static nature[73]. The general conclusion of these studies is that sharecropping contracts are instruments for sharing risk and for solving information problems. Stiglitz (1986)

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[65] "Any planned growth is embedded in a set of institutions and attitudes which come from the past"
[66] Boxley (1971), Bardhan and Srinivasan (1971), Higgs (1972), Huang (1973), Bell and Zusman (1976), Bardhan (1977), Newbery (1974 and 1977).
[67] Newbery (1977).
[68] Nabi (1985)
[69] Huang (1973), Murrell (1983), Alston et al (1984).
[70] Higgs (1972)
[71] Cheung (1968), Bardhan, (1971), Boxley (1971), Newbery (1974), Stiglitz (1974)
[72] Bardhan (1977)
[73] Allen (1985)

synthesized the existence of sharecropping contracts under the theory of asymmetric information.

Though the study of sharecropping initiated to reveal the role of risk, the studies focused on risk began with the interest on the characterization of peasants' attitudes toward risk.

3.3 Uncertainty and Risk in Peasant Economics

In order to understand the role of risk in rural economies, it is necessary to revise the concepts of risk. Even though scholars acknowledge risk plays a crucial role in peasants' economies, the concept of risk seems not sufficiently clarified and it is often found risk is understood in different manners. In fact, part of the misinterpretation of peasants' risk behavior roots in the undifferentiated use of risk in cases in which it would be more appropriate to consider uncertainty, or in cases in which there is or there is no real costs associated to peasants' decisions. Since these differences are important for the definition of the survivor behavior, the discussion of risk is considered both from the historical use of the concept with some comments of the oncoming distinctions.

Uncertainty and risk are different though related concepts used to deal with the behavior induced by the unpredictability of outcomes of variables like weather and prices, or new technologies. Frank Knight (1921) pointed out the distinction between risk as a measurable quantity, and uncertainty as a property of a random variable with an unknown distribution. Some authors like Cancian (1980) highlight the importance of this distinction regarding rural house-

holds. Peasant behaves different if he faces decisions related with weather (risk), as if he doesn't know anything about a new technology (uncertainty)[74]. While the peasant has experienced the variability of the weather during his life, he cannot say anything about the reliability or the performance of a new technology[75]. The research on uncertainty uses to focus on new technologies[76]. A risk–averse peasant would reject an unknown technology, but consider more strategically the feasible impacts of more familiar variables like weather.

However, for a precise understanding of peasant's behavior, risk demands a more elaborated treatment and further distinctions than those proposed between risk and uncertainty. In disagreement with Knight, here it is argued that the concept of risk as a probability would not provide additional insights if it is not associated to an impact. It is true that the degree of knowledge on the distribution of one variable implies different reactions; however, actual economic behavior is ruled by the potential impacts. Risk has to be measured in terms of something else: risk of *starvation*, *death*, etc. Risk is associated to a cost: it is a potential cost. As it will be treated later, risk matters for survivor actors if it can inflict a real loss. If a random output doesn't cause a real loss, the actor's *aversion to uncer-*

[74] Within a broader sense, uncertainty also refers to the lack of knowledge of an outcome, whether the process is known or not.
[75] Schultz and others like Hapgood, 1965; Porter, 1959 (reported in Nowshirvani, 1971) Hiebert (1974), Benito, (1976) considered the influence of *uncertainty* on the adoption of technologies.
[76] Moscardi and De Janvry (1977), Feder (1980)

tainty is what defines his reaction, not his aversion toward risk. Actual risk behavior depends on the aversion to uncertainty, but also from the position of the survivor actor with respect to its survival. This definition of risk as a potential cost, and its consequent distinction of uncertainty, is often used in insurance literature[77]. The distinction between risk and uncertainty helps to explain the discrepancies that scholars found during the seventies and the 80's.

Yet, these necessary distinctions for the ongoing work were not needed to specify the problem of risk attitudes and risk behavior at the beginning of the 70's.

3.4 Risk: Attitudes and Behavior

At the beginning the 70's, there were three theoretical views about the determinants of peasants' risk behavior: the theory of safety first of Roy, the theory of risk aversion of Friedman–Savage, and the theory of relative risk aversion Arrows–Pratt. The safety–first of Roy asserts that risk–averse peasants follow fixed rules to maximize their chances of survival[78]. The safety first approach sounded appropriate to describe peasants behavior and motivated many relevant researches on risk behavior[79].

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[77] Hey (1979), Stephens and Charnov (1982).
[78] Shahabuddin (1985, p. 123)
[79] Moscardi and de Janvry, 1977; Jalan and Ravallion, 1978; Dillon and Scandizzo, 1978; Shahabuddin et al., 1986

The approach of Friedman–Savage asserts the behavior toward risk is determined by inner attitudes. These attitudes depend on the structure of preferences of the actor. Since the concavity of utility functions suffices to guarantee the convexity of preferences, risk aversion is a natural feature of well behaved utility functions[80]. The Arrows–Pratt approach asserts that additional to inner attitudes, the aversion to risk depends on the level of welfare. It is expressed in the function of relative risk aversion RRA (equation 2, chapter 1). As the actors become wealthier the willingness to gamble increases.

Under the utility model, risk behavior should reflect attitudes toward risk. According to Arrows–Pratt, the level of welfare influences aversion toward risk. Actual behavior should be explained with these complementary views. The view of Friedman–Savage differs in some respects to that of Arrows–Pratt. By definition, since welfare may change in time, the real behavior toward risk should change also. This is not the view of Friedman–Savage, for whom preferences are given. Evidently, here it plays the fact that the economic analysis uses to be made in a static basis. This tradition prevails and the literature on changing preferences toward risk is not broadly assimilated. For instance, some authors consider the context influences the evolution of preferences toward risk, but not current preferences[81].

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[80] $U' > 0; U'' \leq 0$

[81] According to March (1996) under standard learning models, risk aversion is the outcome of accumulated learning rather than explanations based on utility functions or human traits. Bearden (2001) uses a dynamic approach base on evolutionary game theory to show that risk–averse strategy displaced risk seeking and risk neutral behavior, therefore showing up risk aversion as a rational choice of learning

Within this view, the external context shapes the preferences toward risk as an evolving process; but it is considered, such preferences do not change. These approaches guided the inquiries about the determinants of risk behavior during the 70's and 80's.

One relevant extension of the theory of risk aversion of Arrows–Pratt is due to Sandmo (1969 & 1970). He showed risk aversion is a necessary and sufficient condition for explaining the lowering of present consumption for reducing the uncertainty of future consumption. This constitutes a foundation of the survivor behavior. Yet, the study of risk during the 70's didn't rest on Sandmo's work. It had to wait up to the rediscovery of consumption smoothing as the specific objective of peasants' economy.

3.4.1 Characterizing Peasants' Attitudes toward Risk

Regarding how peasants react to risk, the intention of revealing typical attitudes toward risk is clear: if peasants are risk neutral or risk lovers, policy makers should promote risky but rewarding alternatives; but if they are risk averters, policies should provide subsidies, credits, and other market mechanisms to enhance peasants' abilities to mitigate risk[82]. Additionally, if peasants are markedly averse to

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agents. Niv et. al (2002), with the use of evolutionary computation techniques that risk aversion emerges from optimal (Hebbian) reinforcement learning. Li (2006) explores the temporal variation of preferences toward risk.

[82] For example, Binici et al. (2003, p.311) suggest from their characterization of attitudes toward risk: "*Turkey's government should focus on developing farm policies that help farmers to reduce risk*". Moscardi and De Janvry assert that (1977, p.710) "*Knowledge of the determinants of attitudes toward risk is, in turn, useful for the*

risk, it could basically explain the inefficiencies of peasants' economies. A set of normative implications should follow from these characterizations. Indeed, most researches oriented to grasp peasants' attitudes toward risk showed they are risk averse[83]. However, other researches found peasants behave risk neutral[84] or even risk lovers[85].

A comparison shows the number of investigations that revealed peasants as risk averse is significant major with respect to the investigations that found they are risk neutral or risk lovers. But these figures should not be considered definitive. Indeed, some of the researches that showed peasants as risk averse also reported they behave as risk neutral or risk lovers[86].

As mentioned before, the basic problem of these characterizations is that they assumed a one–to–one relationship between attitudes toward risk and actual risk behavior. This association between attitudes and behavior doubtless comes from the initial theory of risk aversion of Friedman–Savage. This misinterpretation of risk beha-

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purpose of tailoring technological recommendations to particular categories of peasants".

[83] Wiens (1976), Moscardi and de Janvry (1977), Jalan and Ravallion (1978), Dillon and Scandizzo (1978), Binswanger (1980, 1981, 1982), Hazell (1982), Pope (1982), Shahabuddin et al. (1986), Rosenzweig and Wolpin (1993, p.241), Rosenzweig and Binswanger (1993, p. 57), Ansic and Keasey (1994), Ban–Shira et al. (1997), Wik and Holden (1998), Cummins (1999), Nielsen (2001), Binici et al. (2003), Miyata (2003).

[84] Antle, 1987.

[85] Henrich and Mcelreath, 2002. Bauer and Yamey (1959, p. 805) accounted for the peasants' willingness to take risks.

[86] e.g.. Binswanger, 1980; Rosenzweig and Wolpin, 1993, Eswaran et. al, 1992

vior as coming up from inner attitudes, led to a generalized belief of peasants as characterized risk–averse actors.

During the 70's and 80's, preferences toward risk used to be revealed from economic experiments in which individuals play lotteries. To emulate real world situations, the payoffs of such lotteries are scaled to real life payoffs. From these experiments it has been established that peasants are characterized risk–averse actors[87]. Feinerman and Finkelshtain (1996) recognize the wealthiest the farmers the less susceptible to risk. But these studies also revealed actual behavior toward risk is not ruled by inner attitudes exclusively, and that the level of welfare explains risk behavior only partially[8889].

3.4.2 What Rules Peasants' Risk Behavior

The studies of the 70's and 80's showed a more complex reaction to risk as the behavior prescribed by Arrows–Pratt: while wealthier peasants are willing to gamble with decreasing relative risk aversion as expected, households with a safe but tight horizon of income to

[87] These studies are from Dillon and Scandizzo (1978), but principally Binswanger's (1980, 1981, 1982), and others (Shahabuddin et al., 1986; Ansic and Keasey, 1994; Wik and Holden, 1998; Cummins, 1999; Nielsen, 2001; Binici et al., 2003; Miyata, 2003).

[88] For example (Eswaran et al., 1990, p.473): "… even when all agents have identical risk preferences, differential risk behavior would still obtain if the agents have differential access to capital".

[89] "Masson (1972) offered the keen insight that imperfections in capital markets can induce a risk–neutral individual to behave as if he were risk averse... The neglect of this potentially useful idea is perhaps due to the fact that the approach Masson adopts does not allow a clear separation between risk behavior resulting from purely psychological attitudes towards risk (e.g.., risk preferences) on the one hand, and external (market) factors such as the degree of perfection of capital markets on the other". (ibid, p.474).

cover consumption avoid risk, and poorer households with an insecure horizon of consumption are forced to gamble[90].

What then rules risk behavior? The subject poses questions to the utility model for which risk behavior emerges from inner attitudes reflected in the fixed curvature of the utility function. It also poses questions to the Arrows–Pratt view of relative risk aversion dependent on the levels of welfare. But risk behavior does not depend on inner attitudes, neither on welfare only. This fact has been largely acknowledged by scholars. From the studies of the seventies and eighties, it can be seen that:

> *"Eswaran and Kotwal (1990) show that credit constrained households will be more willing to sacrifice income for less risk than other households, even if their risk preferences are ex–ante the same"*[91]
>
> *Differences in risk behavior need not arise from differences in preferences. They may, instead, be due to differences in abilities to pool risks across time*[92].
>
> *"The differential behavior towards risk… is explained by a set of socioeconomic variables that characterize peasant households in Bangladesh."*[93]
>
> *"Two classes of variables have been used to measure the socio–economic and structural characteristics of the farm households: the age of the head of the household, family size and level of schooling attained by the household head. The second cate-*

[90] Shahabuddin et al. (1986, p.122)
[91] Dercon (1998 p.3)
[92] Eswaran and Kotwal (1990, p. 480)
[93] Shahabuddin et al. (1986, p.122)

gory includes the income related items: farm size, off farm income of the entire household and the total value of the households' assets"[94]

The "socioeconomic characteristics shaping risk attitudes were farmer's age, income, household size and ethical attitude to betting"[95]

The citations make evident that actual risk behavior depends on socio economic variables more than from welfare or inner attitudes. Scholars became aware of a difference between attitudes toward risk and actual risk behavior[96]. One shall expect that the experimental evidence would have had a consequent theoretical interpretation, but it didn't. The sources of this failure are of two types: from the lack of a theoretic interpretation of peasant's motives, and from the complexity of the technical implications that emerge with functions of RRA depending on more than one variable, as Sandmo (1969) shows. The basic problem is that a function of relative risk aversion with several variables makes more difficult to assign different grades of relative risk aversion to each variable. As it will be shown two chapters later in favor of the survivor peasant, the analytical complications can be overcome if it is assumed that peasants weight their decisions with respect to their abilities to provide a secure horizon of consumption.

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94 Ibid (p.127)
95 Dillon and Scandizzo (1978, p.431)
96 Masson (1972), Eswaran and Kotwal (1990).

3.5 Risk Aversion and Economic Performance

The research not only dealt with the characterization of attitudes toward risk and with the influence of other variables different to inner attitudes on risk behavior, but also with the impact of risk and risk aversion in the economic performance of the households. Risk aversion was acknowledged the major source of inefficiencies in peasant economies[97]. It explains why peasants prefer to crop resistant but low profitable crops[98], why they use low doses of fertilizers[99][100] or produce below the optimal[101]. Risk aversion is used to explain why peasants use inefficient institutional arrangements[102], and costly credit institutions[103]. Risk aversion clears the inefficient share of liquid assets[104], the rejection to new technologies[105], and the inefficient supply of food[106].

The investigations cited in the above paragraph have in common

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[97] Moscardi and de Janvry, (1977); Jalan and Ravillion, (1978); Binswanger et al. (1980); Rosenzweig and Wolpin, (1993).
[98] Feder, (1980); Zimmerman and Carter, (2003)
[99] Brink and McCarl, (1978); Feder, (1980); Babcock, (1992); Murdoch, (1995), Bontemps and Thomas (2000).
[100] Cited in (Murdoch, 1995, p.109): Bliss and Stern (1982, ch. 8) …find that fertilizer is a highly productive input in wheat cultivation, but the marginal product of fertilizers remain 3,5 times its price. Farmers could substantially raise expected profits by increasing applications of fertilizer, but by using less fertilizer, investment losses are reduced in bad times. The authors' calculations suggest that the foregone expected profits are most plausibly explained by high levels of risk and risk aversion.
[101] Sandmo (1971)
[102] Rosenzweig, (1988)
[103] Warning et Sadoulet, (1998)
[104] Jalan and Ravallion, (1978)
[105] Moscardi and De Janvry, (1977); Feder, (1980).
[106] Chavas and Holt, (1996).

several features: at a descriptive level, they confirm that risk aversion is the source of the inefficiencies of the rural economy. But these analyses do not give room to efficient remedies to the comprehensible aversion to risk of peasants. Rural economies are irremediably inefficient. The basic issue of these investigations is that peasants pay a premium for security, in several forms: with additional efforts, with lower doses of pesticides and fertilizers, with under investments, etc. But in the cases that apply, where the resources that could but are not efficiently used are reallocated? What is the specific variable that makes the rational peasant to reallocate his resources in a different though misunderstood form? As it has been already exposed, these further inquiries are not possible, since risk is granted with an autarky under the rationale of risk coping.

The normative consequences of this interpretation of the rural economy are straight. Since risk aversion is an irremediable imperfection of rural economies, the only means to improve it is to provide markets for insurance and credit.

After the 90's the interest shifted to strategies for sharing risk and the interest on a precise understanding of the determinants of actual risk behavior was abandoned. These studies were inconclusive in comprehending the determinants of actual risk behavior[107].

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[107] Binswanger (1982) asks: *Does risk derives from prices or also from production and/or costs? Do producers form expectations on prices and quantities separately or on revenues or profits directly? How many years is the length of lags involved in forming price and risk expectations*?

3.6 Risk Sharing

Risk sharing takes place in form of local institutions. Institutions are social arrangements. Risk sharing institutions are given by customs and ties. The studies on risk sharing reveal the existence of a social tissue in from of networks, whose function is to assimilate idiosyncratic shocks like illness, job loss. These associations however are unable to cope with shocks when they impact to all the participants of the network. The aim of risk sharing institutions is to cover holes that the imperfection of rural markets impedes to fill with credit or insurance markets. How far informal institutions are able to cope with risk depends formerly on the strength and capacity of the social networks. Where impacts are covariant, the networking is poor or the consumption surplus is low, households cannot cope with risk and negative impacts are infringed[108]. Where there are no possibilities to conform institutional arrangements, hunger comes[109].

The research on risk sharing started with Hall and Mishkin (1982). Kimball (1988) explored the conditions under informal non–altruistic cooperation can take place. Coate and Ravillon (1993) developed the theory of the optimal informal insurance. Rosenzweig (1988) explored the existence of extended families (with two or more generations making up the household) in rural settings as institutions for mitigating risk. Oldest members of the family provide bet-

[108] Foster (1995) –cited in Murdoch (1995), Jacoby and Skoufias (1992).
[109] Foster, ibid.

ter information about weather variability reducing the exposure to impacts.

Scott (1976) and others have described and discussed at length village level customs of mutual support in traditional societies – the so–called 'moral economy'. The forms of such behavior which have been observed include gift giving, reciprocal interest free credit, shared meals, and communal access to land, sharing bullocks, and work–sharing arrangements. The main risks covered are accidents or illnesses of productive family members or livestock, certain forms of crop damage, such as due to tire or wild animals, and other relatively non–covariate income fluctuations. A recurrent feature of these practices is their reciprocity: recipients at one date often become donors at another" (Coate and Ravallion, 1993).

Risk sharing is the spatial component of risk coping strategies. Risk sharing complements inter–temporal allocation of resources made with financial savings of loans, with assets' accumulation or with grain storage. Risk sharing and inter–temporal strategies are in the core of the survivor actor and will be studied in detail in the next chapter. For the purpose of this chapter it suffices to present risk sharing as one element making up the risk coping peasant.

3.7 The Risk–Coping Rationale

There is a rationale that shows peasant as risk coping actors. Under this rationale, all the economic decisions of peasants are ruled by their aversion toward risk. By coping with risk, peasants secure their income. The timid behavior of peasants is explained by the

conditions imposed by a risky environment. Therefore, policies not only should account price incentives as Schultz and former development economists argued, but to help peasants to cope with risk.

The rationale operates as follows: Utility functions are concave, which suffices to guarantee the convexity of preferences. This convexity is a necessary condition for the consistency of the microeconomic theory. In turn, the concavity of utility functions creates the level of aversion to risk. If preferences are fixed and convex, the attitudes towards risk are fixed too. Peasants are willing to avoid risk and resign with lower but safer incomes. Risk aversion is the key concept to understand peasants' behavioral outcomes. Since risk is everywhere in peasants' economies, risk aversion explains all the sort of inefficient decisions acknowledged for peasants. Risk aversion explains why peasants allocate inefficiently their resources.

Since risk is everywhere and always, peasants allocate their internal and communal resources to cope with risk. Peasants have developed complex strategies to cope with risk. They include smoothing income and consumption, saving money and liquid assets, storing food and building up networks. Coping with risk is the task tackled by peasants to succeed in an uncertain world.

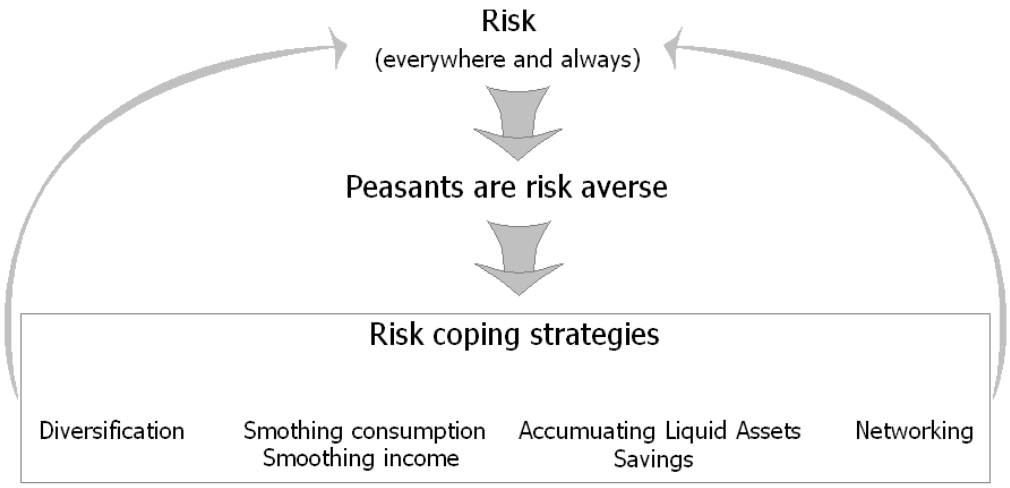

Figure 4. The Risk Coping Rationale

The risk coping rationale highlights the importance of risk in the economic decisions of the peasants. It provides a convincing framework to explain why peasants are preponderantly averse to risk. After the 80's, the exploration of risk in rural settings abandoned the search for a theory that integrates the utility model with actual risk behavior, and focused on all the strategies for coping with risk. There are two types of risk coping strategies (Alderman and Paxon, 1992): inter–temporal strategies encompassing saving money, accumulating liquid assets, storing food, smoothing consumption and income; and spatial or risk sharing strategies that include diversification of crops, networking, gifts, etc.

That risk is everywhere and at all times, and risk aversion shapes peasants behavior, makes sensible to consider *coping with risk* is the target of peasants' agenda. Risk pooling is accomplished in different forms: by smoothing consumption, income or agricultural outputs; by

diversifying crops and jobs; by making use of informal institutions for absorbing unexpected shocks; by saving money or accumulating and decreasing assets or food.

3.8 Risk–Coping and Consumption Smoothing

The risk coping rationale provided a new framework to analyze the economic performance of peasants' households, but it bears a key shortcoming: it sets the smoothing of consumption as a means to cope with risk. Smoothing consumption as smoothing income, are seen as means to reduce risk. Under the rationale, the ulterior goal of the household is to cope with risk and all the strategies are means to accomplish it. Since risk aversion rules the peasants' economic decisions, it becomes natural to consider smoothing consumption not a goal, but an action/mechanism to mitigate risk. However, consumption smoothing holds a different role that the risk coping rationale is unable to grasp.

The analysis, of how all the strategies to cope with risk interlink each other, supposes defined roles for each element: coping with risk is the goal pursued by rural actors, and the strategies deployed are means to achieve the goal. It is useful to consider these strategies whether substitute or complement each other, as current research does. For example: risky crops are complemented with food crops; informal credit substitutes formal credit. Current research about risk sharing in rural areas aims to understand the interlinking between different strategies to cope with risk. Modern development economists hope to find criteria for efficiency that policies for credit and insurance in rural settings should attend.

But it is unusual to find approaches that consider some strategies enhance others. This rareness is due to the perspective set by the risk coping rationale. If one strategy is enhanced by other strategies the rationale breaks down because the enhanced strategy becomes a goal. Therefore, the autarky of risk coping as the overall goal becomes questioned. This is the situation of smoothing consumption in the risk coping rationale. Indeed, as it is shown next, the smoothing of consumption is a goal itself, not a means for coping with risk:

"…such studies (Bhalla 1980; Wolpin 1982; Paxon 1992) suggest a considerable degree of consumption smoothing behavior". (Rosenzweig and Wolpin, 1993, p.224).

"…net purchases are significantly more likely to occur when income is high than when income is low, consistent with what appears to be an implication of a consumption–smoothing motive". (ibid, p.228).

"A growing body of evidence has shown that, while household income in developing countries varies greatly, consumption is remarkably smooth (e.g., Townsend (1994), Morduch (1991), Paxson (1992), Jacoby and Skoufias (1997))". (Fafchamps and Lund, 2003, p.261–2).

"The pilot study launched by the program[110] *indicated that the primary objective of rural households is to ensure family basic needs and in particular food consumption against frequent and severe income shocks". (Nguyen, 1998, p.19).*

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[110] About the Project de Promotion du Petit Crédit Rural

"Risk coping strategies can be classified as those that can smooth consumption intertemporally, through saving behavior, and those that smooth consumption across households, through risk sharing". (Alderman and Paxon, 1992, p. 2).

"Difficulties of precautionary savings: Households' efforts to insulate themselves against risk by accumulating assets ... are also subject to numerous constraints. The paucity of savings instruments makes it difficult and costly for them to accumulate precautionary balances. Consider, for instance, poor impatient households for whom precautionary saving is an essential risk coping strategy. As Deaton (1991) has shown, these households will save even if the return to liquid assets is negative. The reason is that their motive for saving is not to take advantage of financial opportunities but rather to set up a buffer of stock that helps them smooth consumption and deal with emergencies." (Fafchamps, 1999, ch. 3, p.40).

"Several explanations have been proposed for the positive relationship between cash crop orientation and farm size. Some argue that farmers differ in their ability to sustain risk and that crop choices are but the consequence of differences in income risk aversion (e.g, Binswanger, 1980; Shahabuddin, Mestelman and Feeny, 1986). Others invoke the presence of credit constraints, lumpy investments, technological differences, and differentials in relative factor costs across farms (e.g., Feder, 1980, 1985), Eswaran and Kotwal, 1986). These explanations contain elements of truth but they are not based on the fundamental difference between food crops and cash crops, namely that food crops can be consumed while cash crops cannot… Third World farmers have to be self–sufficient in basic staples (e.g. de Janvry, Fafchamps and Sadoulet, 1991)" (ibid, p.71).

"Fafchamps and Kurosaki (1997) estimate a structural model of joint production and consumption choices using data from five Pakistani villages. They uniformly reject the hypothesis that consumption preferences do not affect production choices, thus providing rigorous empirical support for the food security model". (ibid, p.11).

And again: "…net purchases are significantly more likely to occur when income is high than when income is low, consistent with what appears to be an implication of a consumption–smoothing motive". (Rosenzweig and Wolpin, 1995, p.228).

The assumption that peasants are for coping with risk creates two biases. First, it sets their problem in an elegant, abstract, but misleading framework. While consumption smoothing is the major goal for peasants, under the rationale it is one more strategy to cope with risk. It brings about one unsolved theoretical problem, known as the *consumption smoothing puzzle*: rural income is variable and uncertain, but consumption is consistently –surprisingly– smooth. Evidently, the puzzle exists inasmuch as consumption smoothing is not a goal, but a means to cope with risk. The puzzle is a consequence of the risk coping rationale. The theory cannot hold the evident: for survivor households, smoothing consumption is their major goal.

The risk coping rationale brings about a research agenda: determine the drivers of risk behavior, characterize risk attitudes among peasants, determine the impacts of risk in the economic performance of rural areas, understand the interlinking of the strategies for coping with risk and establish the adequate policies for development.

We still lack of theories that properly conciliate the drivers of actual risk behavior with the utility model. Yet, it has not been an obstacle to characterize risk attitudes. A second bias of the risk coping rationale is the autarky granted to risk: the agenda for rural households is to cope with risk, but risk behavior doesn't depend on the economic context. The coarse idea of risk behavior depending on inner atti-

tudes and wealth, and not on the particular situation of the households, leads also to a *risk puzzle*: while rural actors reveal aversion to risk in the majority of experiments in economics, in many of these cases they *behave* as risk neutral, even as risk lovers!

Nevertheless, once attitudes toward risk were characterized, the tasks in the agenda were to determine how risk affects the economic performance of the actor[111], and to analyze the sort of strategies the peasant uses to mitigate risk and how they interlink[112]. To survive, peasants display strategies as the participation in the available markets, accumulation and lessening of assets, smoothing, diversification and communal arrangements for sharing risk. A way to understand these strategies is to classify their elements[113]. Regarding how these elements interlink, one step forward in the research agenda is to analyze a multinomial number of subsets among all feasible dispositions, from individual mechanisms, analyzing how two, three or more elements couple each other[114].

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[111] Feder, 1980; Hazell, 1982; Newbery and Stiglitz, 1982; Chavas and Holt, 1996; Bontems and Thomas, 2000; Lamb, 2003.
[112] Wiens, 1977; Kimball, 1988; Rosenzweig, 1988; Eswaran and Kotwal, 1990; Alderman and Paxson, 1992; Coate and Ravallion, 1993; Rosenzweig and Wolpin, 1993; Townsend, 1994; Besley, 1995; Murdoch, 1995, 1999, 2002; Udry, 1995; Czukas et al., 1996; Ligon, 1997; Ravallion and Chaudhuri, 1997; Nguyen, 1998; Warning and Sadoulet, 1998; Dercon, 1998, 2000, 2004; Fafchamps, 1999; Rose, 1999; Christiaensen and Boisvert, 2000; Barret, Reardon and Webb, 2001; Kurosaki, 2001; Fafchamps and Lund, 2003; Lamb, 2003; Zimmerman and Carter, 2003.
[113] Alderman and Paxon, 1992; Besley, 1995; Nguyen, 1998; Fafchamps, 1999; Rose, 1999; Dercon, 2000.
[114] Examples of such investigations are: Do the Poor Insure? A Synthesis of the Literature on Risk and Consumption Smoothing in Developing Countries (Alderman and Paxon, 1992), Nonfarm Income Diversification and Household Livelihood Strategies in rural Africa: Concepts, Dynamics, and Policy Implications (Barret, Reardon and

However, the agenda seems to bear certain stagnation. It seems the expected knowledge to be gained from further comparisons will not provide a deeper understanding of peasants' microeconomics. Risk–aversion has made us aware suboptimal strategies displayed by peasants are the best options in imperfect economies. And now we know peasant communities display several sub–strategies to survive. How these sub–strategies complement and substitute each other deserves current attention, but afterward it seems we do not expect to find revealing matters. Meanwhile, we still assist to systematic failures in policy initiatives for rural development in third–world countries without additional comments.

The difficulty of assuming the risk coping rationale, is that the role of the smoothing of consumption, and hence the survivor nature of rural households is absconded. Even though the literature acknowledges the importance of consumption smoothing among the rest of strategies to cope with risk, the logic subordinates the consumption

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Webb, 2001), Nonmarket Institutions for Credit and Risk Sharing in Low–Income Countries (Besley, 1995), Drought and Saving in West Africa: Are Livestock a Buffer Stock? (Czukas et al., 1996), Wealth, risk and activity choice: cattle in Western Tanzania (Dercon, 1998),) Income risk, coping strategies and safety nets (Dercon, 2000), Implications of Credit Constraints for Risk Behavior in Less Developed Economies (Eswaran and Kotwal, 1990), Insurance Market Efficiency and Crop Choices in Pakistan, (Fafchamps and Kurosaki, 1997), Rural Poverty, Risk and Development, (Fafchamps, 1999), Risk–sharing networks in rural Philippines (Fafchamps and Lund, 2003), Risk, financial markets, and human capital in developing country (Jacoby and Skoufias, 1997), Farmers' Cooperatives as Behavior Toward Risk (Kimball, 1988), Consumption Smoothing and the Structure of Risk and Time Preferences… (Kurosaki, 2001), Fertilizer Use, Risk, and Off–Farm Labor Markets in the Semi–Arid Tropics of India (Lamb, 2003), and more…

smoothing motive to the risk–coping motive. A case of this interpretation is given by Eswaran and Kotwal (1990, p. 473):

> *"…the ability to smooth out consumption over time … may be an important determinant of risk bearing capacity … individuals with identical risk preferences, those with greater amounts of consumption credit will have greater capacity to absorb risk"*

That the risk coping rationale hides the actual role of consumption smoothing and the survivor motive can be revealed if we shift consumption for risk in the sentence above:

> *"…the risk bearing capacity… may be an important determinant of ability to smooth out consumption … individuals with identical risk preferences, those with greater risk bearing capacity will have greater capacity to smooth consumption".*

3.8.1 Consumption Smoothing as the Driver of Risk Behavior

The changes above show sensible that the smoothing of consumption is a goal, and not a means for achieving another goal. Risk matters, but with respect to survival. Peasants act regarding risk, but principally regarding their individual assessment about their survival. The expectations of the household about its horizon of consumption, is what rules its behavior toward risk. Risk is a central issue of the economic performance of rural households, but all the strategies to cope with risk are for smoothing consumption. This small fact impedes development economists openly to recognize the survivor nature of peasants.

For survivor individuals, risk behavior may be defined as the out-

come of the perception of their ability to smooth consumption, in front of a risky decision. Survivor actors with an insecure horizon of consumption are forced to gamble. Peasants would avoid risks if their strategies supply a tight but safe horizon of consumption. Non–poor peasants with a loose situation would take risks that do not affect the smoothness of consumption. Development becomes a goal once the concerns about smoothing consumption rule out, then peasants stop being survivor actors. These wealthiest peasants able to accumulate capital assets would show risk–averse outcomes proportional to wealth, as predicted by the theory. Inner attitudes toward risk rule decisions, if the gambles don't correlate with real concerns about consumption.

Since policies are not designed for enhancing the households' abilities to solve their basic problem, some risk–coping programs eventually help the survival households to smooth consumption, but some others simply don't. Within the theory, policies focus on risk. Attitudes toward risk determine the extent that policies should cope with it. Profitable but risky options should be supplied to risk neutral–lover communities; and incentives free of risk to communities with definite aversion to risk. Poverty tramps are due to high–premiums that peasants pay for certainty. Typical policies are the provision of credit and insurance markets, forecasting systems or improving crop resistance to weather. All these measures are obstructed by transaction or information costs, and peasants' rejection to innovations due to aversion to uncertainty. A vicious circle: risk aversion explains why peasants do not respond to policies and why policy benefits cannot last.

The risk coping rationale tided up all former discussions in economics about peasants: rationality, failures in provision of productive factors, market holes and institutions. Peasants appear risk–averse as risk is everywhere and always for rural economies. Risk aversion explains all the inefficiencies of rural economies: the deficient supply of crop inputs, the preference for safer but low profitable crops, the systematic rejection to new technologies, the inefficient share of liquid unproductive assets, or the inefficient supply of food.

But survival motives determine risk behavior. Survival motives are revealed by the interest of rural households for smoothing consumption. Peasants do not care about consumption, but about a smooth horizon of consumption. All the strategies deployed by peasant communities are for smoothing consumption regarding the inherent risk of their economies. The achieved smoothness of the consumption, with respect to the usual roughness and incompleteness of other strategies deployed by peasants, is a strong argument that favors its real role in peasants' economies. Furthermore, one should argue the importance of consumption is evident, but as we witness, the risk–coping rationale doesn't let to declare it openly.

3.9 Chapter's Summary

This chapter show how the research on risk in rural economies led to the notion of peasants as risk–coping actors. The chapter shows that the risk–coping peasant contributed with key elements for defining the survivor peasant, but its rationale does not allow appreciate the survivor nature of the peasants, because the smoothing of the consumption appears as one more strategy for coping with risk.

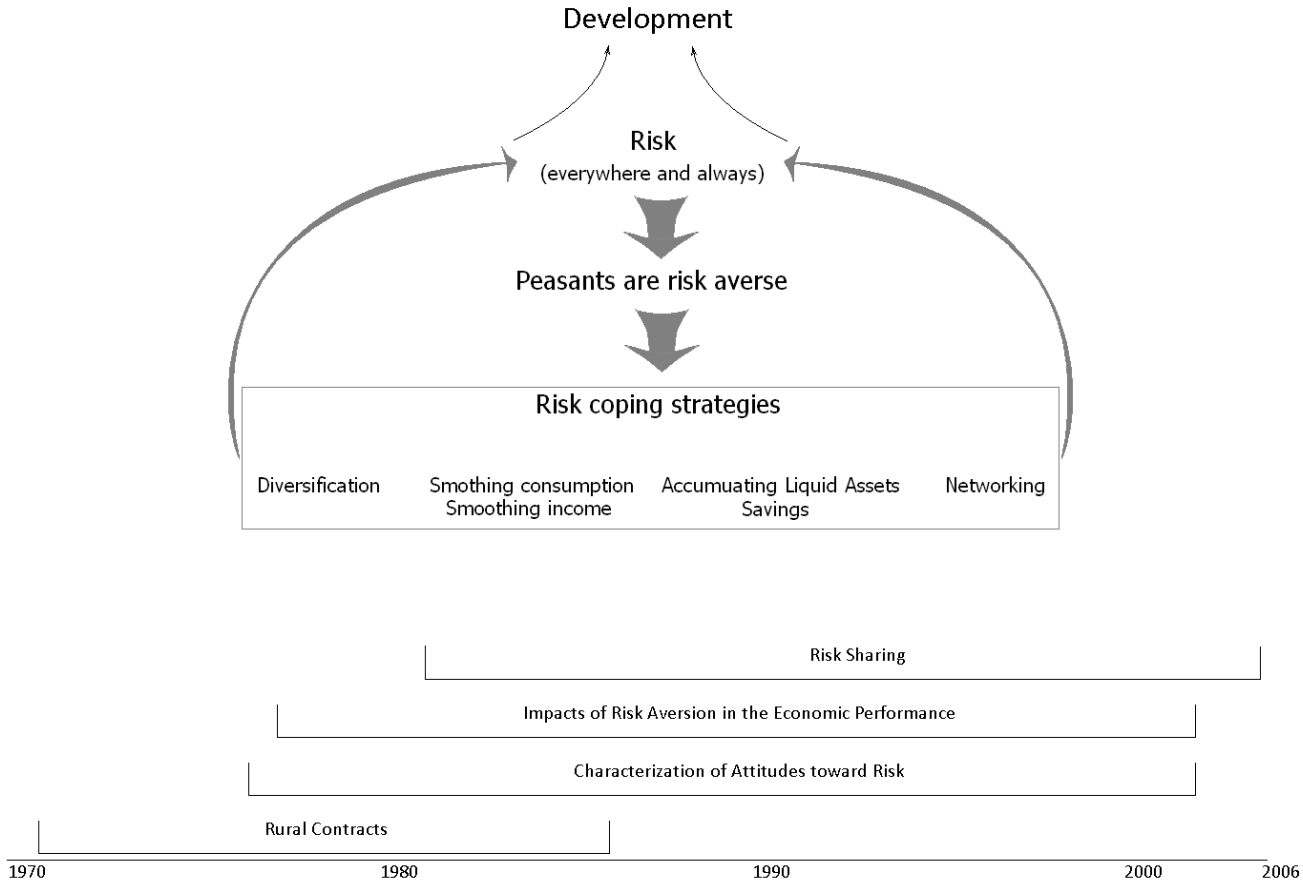

Figure 5. The Research on Risk and the Risk–Coping Peasant

SUMMARY OF PART 2

Part 2 reviewed the history of the interpretation of the peasants in economics of the 20th century. Two well–differentiated periods can be recognized. The first one showed a debate between development economists and other scholars about the peasants' economic motives and their rationality. Albeit programs for development failed, the 60's leaved the acceptance of development as the economic goal of peasants. The second period started at the 70's showed the interest in the study of risk in rural economies. From these studies it spread the notion that for development peasants focus in coping with risk.

The study of risk poses questions to development as the objective of the peasant's household. Coping with risk focuses principally on the securing of a smooth horizon of consumption and the reduction of the household's vulnerability, and not on economic growth. Coping successfully with risk secures the survival of the household. Development seems unfeasible just because all the strategies of peasants' economy turn around coping with risk.

Alternative views of the peasant appeared during the 20th century. Chayanov and Polanyi principally, argued peasants are not engaged in developmental processes. These views were supported by theoretical approaches like the safety first of Roy. Other scholars like Georgescu–Roegen and Amartya Sen argued on the same line. Yet, these views were overshadowed by the acceptance of the view of development economists enhanced by the outstanding work of T. Schultz in 1964. The overshadowing of alternative theories of peasants' motives

was also facilitated by the lack of knowledge about the role of risk in rural economies. These deficiencies have been greatly fulfilled by the subsequent researches on risk.

The revelation of the survivor nature of the peasants is greatly due to the research of development economists. The modern research in development economics gradually shows that the insights of those scholars with alternative views of rural progress were right in pointing out a different nature of the peasants actors. This different nature does not correspond to other rationality. It corresponds to a strategic behavior that rationally takes into account the real possibilities offered by a steadily imperfect environment, something suggested by Chayanov in 1926.

A deserved recognition to Chayanov and Polanyi is still pending. The modern interest of development economists in risk sharing indeed vindicates the Polanyi's claims about the social tissues of rural communities responsible for the allocation of livelihoods. The abandonment of the discussion on the enhancement of economic factors for development, concedes reason to Chayanov's plea about the different structure of rural economies. A full recognition to those visions is not possible, because of the advances of the economic theory and the precise knowledge of the rural economy, and because of the transformation that the model of development has accomplished in

rural settings, as other authors have treated in detail[115].

But development deserves a different criticism. Development didn't pose a normative program only. It presented a picture for perceiving the peasants and their problems. Development created a syntax for judging the economic behavior of the peasant. The rule of this syntax in the description of the peasants' economy is partially responsible for the failure of the diagnosis. The syntax of development leads the economic analysis to a dead end in which nothing is possible. When the discussion turned around his rationality, all the possibilities for development had as final barrier the rationality of the peasant. As the discussion about rationality ruled out and risk became the central issue, all the possibilities for development finished at barriers created by the aversion to risk of the peasant. The existence of a fraction of irrational peasants or of extreme risk–averse peasants for whom development programs fails because of risk aversion, at the end concedes reason to those that have believed in the economic incapability of poor rural actors. It seems beyond the irrationality or the aversion to risk of the peasants, economists have nothing to do.

Next figure aims to summarize graphically the dynamics of the different views about the progress of peasants during the 20th century.

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115 e.g. Thornton, 2005

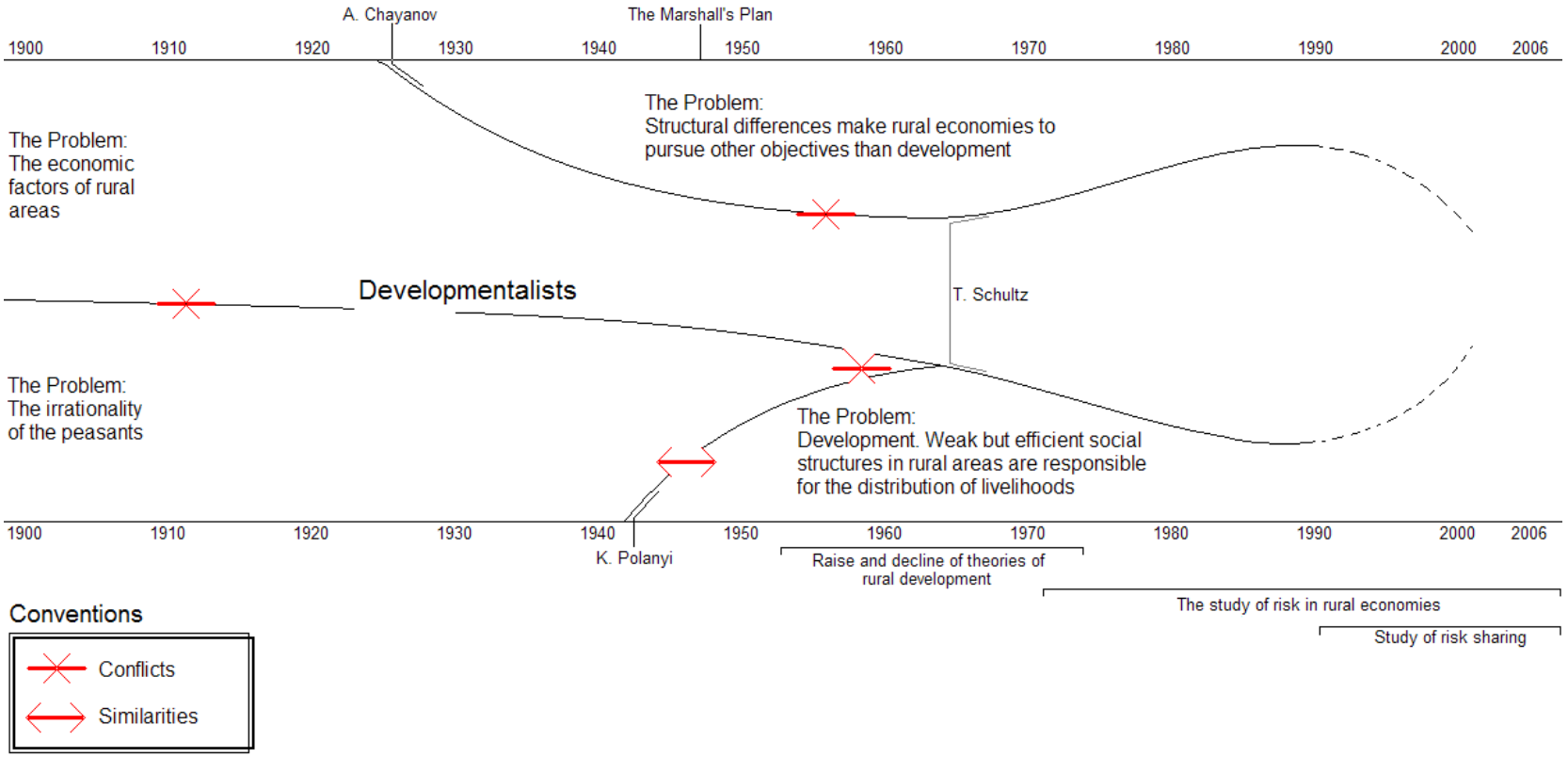

Figure 6. The Progression of Views about Rural Development

PART 3

ECONOMICS OF SURVIVOR PEASANTS

Additional to the generalized notion that peasants are and behave averse to risk, there exists the idea that peasants aim to *subsist*[116]. It asserts peasants live quiet and conformist with their poverty. These ideas about the aversion to risk and the subsistent nature of the peasants seem to complement each other: risk aversion and subsistence seem to follow the same direction since risk aversion suggests hesitance or passivity. At the end, the subsistent risk averse peasant is a timid actor, an incapable. There are reasons like low education, isolation and malnutrition that may reinforce this belief.

But subsistence and risk are in contradiction. Subsistence holds a tacit environment, romantic or boring, where risk seems to be a minor issue. While subsistence denotes passivity and conformism, risk suggests danger and demands awareness and ability to react. Yet, the two ideas still prevail as the usual representation. Even though the research of the last three decades shows that risk is a central issue of rural economies, that all the economic strategies deployed by the peasants aim to cope with risk, the idea of peasants as subsistent and conformist actors still remains, with all the nuances and

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[116] Subsistence: 1432, "existence, independence," from L.L. subsistentia "substance, reality," from L. subsistens, prp. of subsistere "stand still or firm," from sub "under, up to" + sistere "to assume a standing position," from stare "to stand" (Etymonline, 2008)

implications of such description.

This contradictory idea prevails, not because it conforms with the facts, since it doesn't! Peasants deploy complex economic arrangements to secure their livings, far from the actor ruled by sociological patterns. It was presented convincing evidence against the safety first rule[117]. Additionally, as it has been shown, the description of peasants' behavior as ruled by risk aversion only does not grasp the diversity of behavioral responses. It is simply not true that inner attitudes prevail over actual circumstances. The view of peasants' behavior as exclusively ruled by risk aversion remains as the basic picture because it reinforces the fallacy of the subsistent actor, and because it offers an explanation for the failure of policy programs. Peasants are subsistent and therefore all the programs for development end in the irrationality or the inefficiency brought about by risk aversion.

The survivor peasant aims to present the peasant under an economic more coherent perspective. Risk is the central element of the peasants' economy and they act as survivor actors. This part aims to present a complete description of the survivor peasant, regarding his stylized facts, and the actual behavior in front of risk.

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[117] Binswanger, 1980 and others as shown in the above chapter.

4 THE SURVIVOR PEASANT

This chapter presents a definition of the survivor peasant and its characteristics. Both the stylized behavior of peasants and actual risk behavior make of peasants survivor actors. It argues the modeling of the survivor peasants cannot be done with the usual approaches. The shortcomings of the usual modeling of peasants' behavior based on the utility model and Willingness to Risk are also presented. The modeling of the peasant's household should not be made with utility functions of money. Actual risk behavior differs from Arrows–Pratt Willingness to Risk based on wealth. Additionally, the chapter presents former economic descriptions of the peasants that aimed to the survivor peasant. The chapter end with a introduction to the problem of a normative statement for survivor actors, to be considered in more detail in the last chapter. This discussion provides the reference for the modeling of the survivor peasants to be considered in the next chapter.

4.1 Definition and Justification

Huge and relevant evidence shows peasants concentrate on the provision of a safe and stable consumption, as they try to preserve its smoothness from any shock[118]. Peasants are survivor actors: they allocate all their internal resources and deploy individual and communal strategies *for* securing a smooth horizon of consumption. Survival defines the actual economic motive of peasants and explains their behavior. Peasants are survivor actors, not because they want,

[118] Paxon, 1992; Rosenzweig and Wolpin 1993; Townsend, 1994; Murdoch, 1995; Udry, 1995; Jacoby and Skoufias, 1997; Ravillion and Chaudhuri, 1997; Nguyen 1998; Fafchamps and Kurosaki, 1997; *Hoogeveen, 2001 ; Rosenzweig, 2001 ;* Zimmerman and Carter, 2003; Fafchamps and Lund, 2003 ; Skoufias, 2007.

but because they face risks of hunger and starvation permanently.

The featuring of peasants with one remarkable attribute has been a tradition aimed to grasp their distinctive behavior. These short characterizations have powerful influence in the picture that scholars hold about the behavioral baseline from which any process for development should start. These expressions pose a picture of the fitness of peasants' behavior with respect to the expected conduct required for development. At the beginning of the last century peasants were considered irrational. During the 50's and beyond, the idea of peasants as subsistent players popularized, very close to the actors described by Chayanov. The expression chayanovian peasant has been also used to describe isolated households with marginal or no contact with markets. Later during the 60's the optimizing peasant emerged and consolidated, a triumph of development economists. The basic feature of the optimizing peasants is that they are rational according to their actual means and technologies. Between the 80's and the 90's came up the notion of peasants as risk–coping actors. Yet the risk coping peasant is not so popular as the subsistent or the chayanovian peasant.

However these adjectives: irrational, optimizing, subsistent or risk–coping, cannot hold both the crucial role of risk and the main concern of the peasants: the temporal smoothing of their consumption. Peasants are under risk of hunger and they act upon consequently. This circumstance makes them survivor actors. The risk of hunger and starvation enhanced under the expression *survivor* highlights that the risk of consumption holes rules the peasants' behavior.

The risk of hunger is the key element that defines the survivor actor. An irrational actor seems unfitted to survive under the siege of risk. A survivor actor is forced to act efficiently. A peasant is irrational if his actuation takes place in theater of markets. But this is not the actual scenario in which this actor performs.

Moreover, the risk of hunger doesn't permit the peasant to be conformist as subsistent connotes. The survivor behavior differs from that of a subsistent actor. While the survivor actor is forced to gamble if the circumstances it so impose, the subsistent actor seems averse to gambling. The unique similarity between a survivor and a subsistent actor would be their economic limitations, because of a personal conformity or because of the circumstances. But risk makes of peasants survivor beyond subsistent actors.

The survivor actor is optimizing as Schultz argued. At this respect the differences, between the optimizing peasant of Schultz and the survivor peasant, lie in the solution for his enhancement. While Shultz promoted a market based solution, the survivor peasant demands policies for enhancing their chances to survive. A more detailed treatment of these aspects will be considered in the modeling of the survivor actor and in the discussion of a suitable normative.

Finally, survivor actors cope with risk, but not from the tenets that make up the risk coping peasant. The risk coping actor faces risk permanently and acts upon consequently, but his behavior is ruled by inner attitudes toward risk. The risk coping peasant uses to be risk averse. The survivor peasant can be risk averse, but he acts ac-

cording to his circumstances. If the survivor peasant has to take risk for surviving, he does. This flexibility is not permitted to the risk coping actor, whose behavior is dictated by his attitudes. As consequence of this formal restriction, the usual theory cannot grasp the variety of actual risk responses of peasants.

The interpretation of peasants as survivor actors is coherent with the universality of ends proclaimed by the neoclassical views about the scope and subject–matter of economics. As Robbins declared in 1932, economics is not concerned with one end, but with situations in which there is a conflict between means and ends[119]. If we consider economics as a scientific approach, within the universality of ends there exists one survivor actor with definite structural circumstances –pervasive and unsolvable imperfections and holes–, holding definite ends –surviving–.

The survivor actor demands a suitable normative. This normative is not for fulfilling the caprice of an actor unwilling to integrate with the developmental process, but as imperative for tiding up the actual concern of actors in desperate and hard situations. Though well intended, policies based on the participation of rural households in

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[119] "The economist is not concerned with ends as such. He is concerned with the way in which *the attainment of ends is limited. The ends may be noble or they may be base. They may be "material" or" immaterial" –if ends can be so described. But if the attainment of one set of ends involves the sacrifice of others, then it has an economic aspect" (p. 25).*

markets have not lasted. Before inducing the peasants to participate in uncertain undertakings, they demand real and long–standing enhancements of their capabilities to secure themselves a safe horizon of consumption. For peasants the perfection of markets is a chimera and the risk of hunger is there, daily.

4.2 The Survivor Behavior

The so–called stylized behavior of peasants defines the survivor behavior. It can be recognized at different instances: the negative supply response when crop prices are high, the unproductive share of liquid assets at expense of capital assets, the "inefficient" allocation of crop inputs, the preference for resistant but low profitable crops, and the steady contrast between the variability of the income and the smoothness of the consumption, among others[120].

Keynes "*believed that India was "… a country impoverished by a preference for liquidity which stifled the growth of real wealth" (Keynes, 1973, p.337)*"[121]. Many studies have explored the role of liquid assets, as it has been already considered in the above chapter. There is a good explanation for this preference: "*Assets act like a buffer stock, protecting consumption against bad draws of income*"[122]. Liquid assets are preferred because they can be converted in food. Assets are valued according to its reliability for covering consumption holes. What is the optimal

[120] e.g.. Udry (1994) and modern researches show that loans in many rural areas are for consumption principally.
[121] Pointed out by Jalan and Ravallion, 1978, p.2.
[122] Deaton, 1991, p.1221.

share between liquid and capital assets for survivor individuals?

Some authors found peasants don't respond to price incentives[123]. Even more, some authors reported negative supply responses to price incentives[124]; e.g.. peasants were not only impassive to price incentives: they decreased the supply of food crops under high prices. The negative supply response indicates that the end pursued by the peasant as economic actor is to secure his consumption in time. If peasants value survival over growth, they would prefer to save future consumption rather than selling this production for increasing profits in a high price environment. By storing food, peasants keep in control the allocation of consumption.

Some investigations, nowadays obligated citations for the state of the art on peasants' microeconomics[125], showed the outstanding contrast between the variability of income and the smoothness of consumption in rural villages. Income is variable and consumption is steadily constant. At the 90's it was regarded as a puzzle[126]. The puzzle appears under the risk coping rationale: all the strategies of the rural actor can be seen as forms of diversification or smoothing for coping with risk. In fact, the expression "smoothing consumption" was coined as one strategy for reducing risk[127]. A former vision was

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[123] As for example Stern, 1962.
[124] Bardhan K., 1970; Nowshirvani, 1971.
[125] Townsend, 1994; Morduch, 1991; Paxson, 1992; Jacoby and Skoufias, 1997.
[126] e.g.. Black 1990, but many others.
[127] Rosenzweig, 1988.

to consider that consumption correlates with income[128] and therefore the puzzle arises as the contrast between the steady smoothness of consumption in front of the variability of the income.

However, if the economic actor facing pervasive restrictions holds survival as his economic motive, the smoothness of his consumption emerges as his overall goal. There is no puzzle for survivor actors: all their strategies are for smoothing their consumption in regard of risk. Other strategies, like crop and job diversification, income smoothing and risk sharing, are for smoothing consumption; or in other terms, for cancelling the risk of consumption holes. It is clear that the preference for liquid assets, the negative supply response and the smoothing of consumption are related to risk. The instances in which the peasant reveals his survivor nature have risk as common feature. Risk behavior defines the survivor behavior. For instance, risk has been found related with preference for resistant but low profitable food crops[129]. Murdoch, 1995, p. 110 says:

> *"I find evidence that households whose consumption levels are most vulnerable to income shocks devote a greater share of land to safer, traditional varieties of rice and castor than to riskier, high–yielding varieties (Murdoch, 1990)."*

Even though the connections between risk behavior and the consumption smoothing motive are evident and scholars don't hesitate

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[128] Just & Pope, 1978; Antle,1987, 1989; and from the PIH of Friedman.
[129] Feder 1980; Zimmerman and Carter 2003.

to recognize that the basic concern of the peasants is the securing of his horizon of consumption, there lacks a comprehensive approach, as that aimed here. The inexistence of such desired approach seems to lie in the total credibility that scholars have granted to the risk coping rationale and the theories of risk aversion.

As discussed before, the basic problem is that these theories create the notion that peasants engage in coping with risk and that risk aversion rules the economic behavior of the peasants, and consequently hidden the central role of smoothing consumption. The consumption puzzle is evidence of the impediments created by the risk coping rationale. Scholars are indeed aware of the actual role of consumption smoothing. In favor of the survivor behavior but under this rationale, Fafchamps et al. (2003, p. 285) put it as:

> *"Regression results confirm that consumption smoothing is an important motivation for gifts and informal loans, but gifts and loans appear, by themselves, unable to efficiently share risk at the village level."*

4.2.1 The Misguide of Risk Aversion

Risk aversion seems to have played a significant restraining role of novel approaches for describing actual peasants' risk behavior. Peasants have been reasonably considered risk–averse[130]. The inefficiencies in the performance of rural households were found related

[130] Dillon and Scandizzo, 1978; Binswanger 1980, 1981, 1982; Shahabuddin et al. 1986; Ansic and Keasey 1994; Wik and Holden 1998; Cummins 1999; Nielsen 2001; Binici et al. 2003; Miyata 2003.

with risk and risk aversion[131]. For instance, risk aversion has been found the ground for the low dosage of fertilizers[132]. Murdoch (p.109) comments:

> *"Bliss and Stern (1982, ch. 8) …find that fertilizer is a highly productive input in wheat cultivation, but the marginal product of fertilizers remain 3,5 times its price. Farmers could substantially raise expected profits by increasing applications of fertilizer, but by using less fertilizer, investment losses are reduced in bad times. The authors' calculations suggest that the foregone expected profits are most plausibly explained by high levels of risk and risk aversion".*

Other practices like the production below the optimal[133], inefficient institutional arrangements[134], and use of costly credit institutions[135], have been considered the outcome of risk–aversion. Moreover, it was found peasants deploy strategies to mitigate risk[136]. Risk aversion has been shown as the cornerstone of the backwardness of the peasantry. Dercon says:

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[131] Moscardi and De Janvry 1977; Feder 1980; Hazell 1982; Newbery and Stiglitz 1982; Chavas and Holt 1996; Bontems and Thomas 2000; Lamb 2003.
[132] Moscardi and De Janvry 1977; Brink and McCarl 1978; Feder 1980; Babcock 1992; Murdoch 1995; Bontemps and Thomas 2000.
[133] Sandmo 1971.
[134] Rosenzweig 1988.
[135] Warning et Sadoulet 1998.
[136] Wiens 1977; Kimball 1988; Rosenzweig 1988; Eswaran and Kotwal 1990; Alderman and Paxson 1992; Coate and Ravallion 1993; Rosenzweig and Wolpin 1993; Townsend 1994; Besley 1995; Murdoch 1995, 1999, 2002; Udry 1995; Czukas et al. 1996; Ligon 1997; Ravallion and Chaudhuri 1997; Nguyen 1998; Warning and Sadoulet 1998; Dercon 1998, 2000, 2004; Fafchamps 1999; Rose 1999; Christiaensen and Boisvert 2000; Barret, Reardon and Webb 2001; Kurosaki 2001; Fafchamps and Lund 2003; Lamb 2003; Zimmerman and Carter 2003.

"if the high return activity is also more risky, then differences in risk aversion may explain differences in portfolio's across households. Poor households may then stay poor in the long run because they are risk averse".

Additionally, the confirmation of the Arrows–Pratt behavior has undoubtedly reinforced the acceptance of the risk–coping rationale. Dercon (1988, footnote 4) comments:

"Rosenzweig and Binswanger have found that wealthier households allocate their productive assets to riskier activity portfolios than poorer households in some villages in India. Murdoch (1990) found that credit constrained households entered less in high yielding but risky crops. Dercon using data on Tanzania found that households with lower assets holdings allocate more of their land to the less risk crop".

Risk and risk aversion became the key concepts used to explain the backwardness of peasants. It is straight to link the inefficiencies on assets, inputs, etc., with risk aversion. But the problem with the approaches of Friedman–Savage and Arrows Pratt based on the utility model is that they do not offer a further ground of the aversion toward risk: peasants behave averse to risk because they are averse to risk[137]. Risk behavior does not result as a consequence of the demands of the situation pushing the actor to take or to avoid risk, but it emerges from psychological preferences.

[137] For a related discussion see Binswanger 1982.

In order to preserve the idea that risk behavior is given by preferences and not dictated by the circumstances, it has been considered the risky context influences the shaping of a given attitude: the inner aversion to risk has been explained by the physical conditions that likely have permanently forged such attitudes[138]. Under this view, once the actor becomes risk–averse or risk–lover, his behavior is almost predictable and fixed.

However, the explanation that peasants are inefficient from their aversion to risk does not offer a comprehensive picture, because actual risk behavior does not come up from inner attitudes only[139]. The basic fact discussed one chapters above and presented by Binswanger and other authors, is that peasants may reveal to be risk averse in experiments but the *behave* in many cases as risk neutral or risk lovers. The theories of risk aversion depending on inner attitudes and welfare, cannot grasp that other variables influence risk behavior. To understand actual risk behavior it is necessary to consider the role of consumption smoothing.

4.2.2 Actual Risk Behavior

Actual risk behavior transcend risk–aversion. Inner attitudes don't rule actual behavior. The discrepancy was broadly acknowledged but it can be summarized in the assertion of Eswaran and Kotwal:

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[138] See the discussion of chapter 2 and March 1996; Bearden 2001; Niv et. al 2002; Li 2006.
[139] See Masson 1972, Binswanger 1980, 1981, 1982; Eswaran et. al 1990; and Wärneryd 1996.

"…thus, even when all agents have identical risk preferences, differential risk behavior would still obtain if the agents have differential access to capital"[140].

Arrows and Pratt proposed that wealth explains the Willingness to Risk, but this approach is also inadequate to model peasants' risk behavior, because peasants' wealth levels are extremely low. All these circumstances are of course related with the imperfection of markets of rural settings, though at the beginning of the 70's the connection with the survivor motive were even less absconded:

"Masson (1972) offered the keen insight that imperfections in capital markets can induce a risk–neutral individual to behave as if he were risk averse... The neglect of this potentially useful idea is perhaps due to the fact that the approach Masson adopts does not allow a clear separation between risk behavior resulting from purely psychological attitudes towards risk (e.g.., risk preferences) on the one hand, and external (market) factors such as the degree of perfection of capital markets on the other"[141].

"…we have demonstrated that differences in risk behavior need not arise from differences in preferences. They may, instead, be due to differences in abilities to pool risks across time"[142].

The recognition that other variables different to inner attitudes and

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[140] Eswaran and Kotwal (1990, p. 473)
[141] Eswaran and Kotwal (1990, p. 474)
[142] Ibid, p. 480

wealth influence risk behavior led scholars[143] to pose experimental approaches for grasping the factors different to inner attitudes that rule actual risk behavior. Different investigations, showed other variables different to wealth influence actual risk behavior[144]:

> *"The differential behavior towards risk… is explained by a set of socioeconomic variables that characterize peasant households in Bangladesh".*[145]

These characteristics were found to be: human capital (age of head of the household, family size and level of schooling attained by the household head) and economic features: farm size, off–farm income, and the total value of the household's assets (a mixture of liquid and non–liquid assets). The fact of other variables different to inner attitudes or wealth that correlate with risk behavior challenge the universality of the approaches of Friedman–Savage and Arrows–Pratt.

However, still there exists a lack of theoretical approaches that conciliates the utility model with the mentioned variables[146]. There has not been presented an explanation that preserves the unity between the utility model and risk behavior. The discrepancy between attitudes toward risk and actual risk behavior, and the recognition of other variables different to wealth that correlate with actual risk behavior pose questions to the way how utility functions have been

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[143] Principally Binswanger et al (1980,1981,1982) but others also.
[144] Masson 1972, Binswanger 1980, 1981, 1982; Eswaran et. al 1990; and Wärneryd 1996, Feinerman and Finkelshtain (1996).
[145] Shahabuddin et al. (1986, p. 122)
[146] See for instance Feinerman and Finkelshtein (1996).

used to model actual risk behavior, and represent unresolved issues for which new theoretical and simple approaches are pendent. Let discuss the demands and implication for such new approaches.

4.3 The Utility Model and Survivor Behavior

That other variables different to wealth or inner attitudes influence risk behavior put under siege the utility model, since the economic modeling aims to shape the actual economic behavior. It also shows the Arrows–Pratt approach insightful but incomplete. About the utility model, if "*the ability to pool risks across time*" shapes actual behavior toward risk, then the utility model should account for these variables. The inclusion of other variables poses two alternatives.

One option is to consider the endowments with which the household pools risks[147] influence the preferences and therefore shapes the utility function. But including the context in the utility function has profound implications about the nature of the economic actor. It has been proven that the concavity of the utility suffices to guarantee the convexity of preferences. The possibility that the concavity of the utility depends on the economic context of the actor pose serious implications about what the western society understands by economic freedom. The inclusion of the ability to pool risks in the exponent of the utility proposes a world in which preferences are in practice exogenously given. Men do not wish what they want, but what the con-

[147] According to the guideline of Eswaran and Kotwal (1990, p. 480)

text allows. Though this discussion is beyond the scope and matter of the present thesis, it is to remark that peasants are not free, since they cannot wish anything they would like. Their economic freedom is constrained to the actual options offered by the rural context.

Another option is to find an aside approach similar to the function of relative risk aversion of Arrows–Pratt. Under this approach, utility functions remain characterized by the exponent of risk aversion corresponding to inner attitudes. Yet, an additional function (RRA) explains the willingness of the household to take risk from the wealth situation. Regarding that different variables correlate with actual risk behavior, an approach similar to Arrows–Pratt is difficult to succeed. A similar approach faces technical obstacles because, in a function of relative risk aversion with several variables, "*there is no obvious candidate for the concept of decreasing risk aversion*"[148]. The inclusion of several variables for relative risk aversion obliges to consider how the Willingness to Risk is deployed. Some approaches have attempted to overcome this difficulty[149], but they lack the simplicity of the approaches of Friedman–Savage and Arrows–Pratt versions.

It does not mean the utility model cannot be considered adequate for describing the peasant as economic actor. Certainly there is a questioning to the ability of the simple form of utility functions for mod-

[148] See Sandmo (1970, p. 354)
[149] See Feinerman and Finkelshtein (1996).

eling actual risk behavior, but peasants are optimizing actors as far as they allocate their resources for maximal benefits at the margin: in order to survive they engage in activities with highest returns to their horizon of consumption, and cope with risk with strategies aimed to secure a reliable smoothing of their consumption. Peasants become satisfied if they are able to smooth their consumption during the crop cycle. What differentiates the survivor from the developmentalist actor is that the smoothing of their consumption, not the growth of their wealth, rules their economic agenda. Another approaches seem to fail because do not make explicit the survivor motive. The attainment of the total consumption evenly distributed during the crop cycle is the metric that should be used to judge the optimality of the behavior of survivor individuals; and the risk of holes in consumption the reference for assessing whether their behavior is inefficient or not from risk behavior. Peasants as everybody else have psychological attitudes toward risk; yet, their actual behavior toward risk is ruled by the expected returns to consumption from their economic activities.

4.3.1 Utility and Development: Technical Shortcomings

Survival is the economic motive of peasants as far as further goals are unfeasible. If the smoothness of the horizon of their consumption is not secured, peasants do not engage in other plans different to survive, a task that takes up their entire resources. A rational behavior doesn't imply that the actor pursues development. It just asserts that the actor behaves strategically for accomplishing his particular motive. This clarification is pertinent because the literature of development economics assumes that a rational behavior implies de-

velopment as motive; as if a rational behavior had development as the goal. Schultz argued the developmental nature of peasants from their economic rationality. The defense of peasants' rationality induced to identify development with the maximization of utility: if peasants are utility maximizers, they pursue development. The straight connection between the maximization of one utility and development is a legacy of development economists of the 60's.

Many papers devoted to the modeling of rural households do not mull over that the modeling of peasant households cannot be made with utility functions of variables of money, as it uses to be for urban actors. Friedman and Savage, and Arrows and Pratt make clear in their classical papers about risk that their theories are applicable to utility functions of money; i.e. to environments in which the economy rests on money and the ideal of the perfection of markets is at least feasible. This is the basic reason why the modeling appeals to income or wealth as the central variables of concave functions.

But this is not the case of rural economies. The modeling of the rural household cannot be done based on income or wealth. Rural markets are pervasively imperfect and the peasants' wealth are extremely low. The crucial differences between rural and urban economies should leave room for the discussion of the suitability of utility functions of money for the modeling of rural actors, and of the functions based on wealth for analyzing actual risk behavior. Though with ex-

ceptions[150], the research on risk behavior has predominantly used wealth for the modeling of relative risk aversion[151].

On one side, the economy of peasants' households rests on money, income and flows from capital assets, only partially. Several important activities of the rural economy have no connection with markets or are not homogeneously valued by market prices. This circumstance brings about technical difficulties for the use of utility functions based on money. In particular, such activities for which there are no markets cannot be weighed with a unique price. These difficulties were partially solved with the Agricultural Household Models (AHM) appeared during the 80's[152]. The concept of shadow prices, which assign a value in terms of money to goods and activities out of the market, solved the formal problem and gave a rationale to deal with the comparisons inherent to the analysis of behavior at the margin. The AHM and the concept of shadow prices allowed extending the comparative static analysis to rural households.

However, there are two important shortcomings of the AHM. One is that shadow prices are endogenous to the household[153]. This is not a minor issue. In practice, the assignation of individual prices continues reflecting the imperfection of rural economies. Shadow prices al-

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[150] Zhang and Ogaki, 2004; Kurosaki, 2001.
[151] Dillon and Scandizzo, 1978; Jalan and Ravallion, 1978; Wik et al., 2001; Antle, 1987; Binswanger, 1981; Pope, 1982; Wärneryd, 1996; Binici et al., 2003.
[152] Squire et. al 1986; Taylor and Alderman, 2003.
[153] Jacoby, 1990.

low to modeling the static allocation of resources within the household, but impede an inter–household analysis.

A further shortcoming of the AHM is even more relevant. The whole problem posed by utility functions of money, transcends the valuation of goods and activities with no markets. The utility model makes also reference to risk and risk behavior, and the AHM does not deal with risk at all.

Aside the implications of the utility model in the treatment of actual risk behavior, the aspect to highlight is that there are several reasons to question the use of income as the basic variable of utility functions to analyze peasants' economic behavior.

4.3.2 Income vs. Consumption

As discussed one chapter above, ever since the first models of the rural household of Sen (1966) and Hymer and Resnick (1969), consumption has been used as the variable of the utility due to the inability of income to take account of the economy of rural areas as a whole. After these first models, it is usual to find models of peasants' households as maximizer of utility functions based on consumption[154], not as maximizer of profit[155]. This practice continues until to-

[154] Sandmo, 1970; Nowshirvani, 1971; Rosenzweig, 1980; Kimball, 1988; Eswaran and Kotwal, 1990; Saha, 1994; Rosenzweig and Wolpin, 1993; Fafchamps et al., 1998; Ogaki and Zhang, 2001; Rosenzweig, 2001; and others…
[155] With exceptions: Wolgin, 1975; Wiens, 1977; Just and Pope, 1978; Jalan and Ravallion, 1978; Feder, 1980; and Antle, 1987, 1989.

day. However, the modeling of rural households requires more than just an exchange between income or wealth for consumption in the utility function. It is not possible to equate in properties consumption with income. The rural actor does not regard these two variables as similar and therefore the rationales of an optimizing behavior are different for both variables.

The first aspect that makes income different from consumption is the extent that the actor is able to control the variable. Income is exogenous to the household. The theory of risk states that the only thing the risk–averse actor can do is pool risk and pay a premium for security, in order to obtain a certain level of utility. The assumption is that income is variable and uncertain, but its distribution is known. This is not the case of consumption. Income is variable in nature and consumption tends to be smooth. As Murdoch, Townsend and others have reported, in spite of the high variability of the income in rural areas, the consumption is steadily smooth. The household controls consumption.

4.3.3 Consumption Smoothing and Risk Behavior

The risk of income is exogenous and higher than the risk of consumption holes. Consumption depends on income certainly, but also on many other variables like the availability of food crops, the stocks of food, the strength of local institution for sharing risk, ties, the household's endowments, the access to credit or in general the ability to pool risks. In summary, if the household's consumption solely depends upon income, the two variables could be exchanged in the utility function, but it is not the usual case, since all the arrange-

ments and strategies deployed by the household are designed for filling any potential hole in its horizon of consumption. Income plays a role in the smoothing of consumption, may be a central one, but its morphology is different. In fact, is consumption and income had the same morphology, the peasant's household wouldn't need any additional arrangement for filling any potential hole.

The expectations of the households on the fulfillment of their survivor objectives are not based on expectations on income exclusively. The determinants of risk behavior can indeed be associated to all these variables that enhance the household for smoothing its consumption. What Eswaran and Kotwal call the ability to pool risk can be thought as the endowments, activities and existing factors that the household grabs for smoothing consumption.

Since the basic and foremost risk refers to the potential of consumption holes, further economic decisions of the peasant's household are weighed up with reference to the horizon of consumption. Regarding the bulk consumption of the cycle, e.g.. the total minimal acceptable consumption of the household, the household can foresee three potential situations: the level of consumption will be below, equal or above a minimal consumption that the household judges acceptable. Hence, in front of risky choices, the three situations pose different alternatives that the household cannot refuse to face:

First, if the foreseen level is below the minimal consumption, the household has to gamble in more risky and more profitable choices. It could be that the household just has the chance of praying to the

heaven for getting variable income, e.g. off farm work. Another option is to invest in more profitable more risky options. If these investments have to be made with own resources or with savings, the household indeed is opening a hole to future consumption. In other terms, the household is not only gambling the investment, but primarily future consumption. A household in desperate situation will show risk lover behavior even though its members can be risk averse.

Second, if the level of consumption for the whole cycle is expected to be tight but safe achieved, the survivor household is unwilling to gamble. Whether the household participate in risky options will likely depend on the psychological attitude of the decision maker. This is the case in which certainly risk behavior is ruled by inner attitudes toward risk. This behavior could also be assimilated as a typical safety–first behavior.

Finally, if the foreseen consumption for the cycle is higher than the minimal acceptable consumption, the household may be willing to gamble in risky options for improving its situation. It again would at the end depend on inner attitudes and on the feasibility of further options. In this case, the household would deploy relative risk aversion, according to what the theory of Arrows and Pratt predicts.

4.4 The Survivor Peasant in Economics

This section is to show that along the 20th century many scholars have been aware of the survivor nature of peasants, but their approaches burdened whether the imperfection of the economic lan-

guage of the epoch or the lack of theories for describing acutely their behavior. The distinction of peasants as survivor and not developmentalist –either subsistent– agents can be more easily recognized from the normative that accompany the argumentation. This alternative normative asserts at the end that peasants cannot develop as expected by policy makers, due to their imperfect context. Yet, this basic claim does not refer exclusively to development as it is understood in the market–oriented economy. Indeed, the first version of the survivor peasant made by A. Chayanov was posed for the Russian development under the rule of the Bolsheviks. It allows assert that the survivor nature of peasant does not depend on the type of the ruling economy.

The first approach aimed to describe the peasants' economy is due to Chayanov. The works of development anthropologists like Polanyi, Dalton and others also presented some aspects related with the survivor peasant and questioned the scope and benefits of the market society for solving the problems of the rural communities. Roy and others proposed the safety first theory, which entails risk as a basic concern. Georgescu–Roegen claimed also for a differentiated treatment for rural communities taking into account their context. Yet his claims were overshadowed since they appeared during the height of the theories of development. At the 70's Sandmo made a cornerstone contribution of the survivor peasant. During the last 15 years it emerged a new normative wave, the movement of livelihoods and the movement of food security that contains worthwhile elements related with the survivor nature of peasants.

4.4.1 The Chayanovian Peasant

The first systematic description of peasants in economics was presented by Alexander Chayanov, indeed a version of the survivor peasant. The chayanovian peasant needs to be contextualized. Chayanov's ideas belong to the Russian tradition of the 19th century. The rural problem for the Russians was not the availability of land. The conflict was about the property rights on the land and the role of peasants in the Russian economy. As development economists, the Bolsheviks planned the peasants to participate in development. Chayanov argued the natural economy of rural areas made the peasants to plan their subsistence. Chayanov believed peasants were not going to participate in development because their isolations led them to care on their subsistence only. Yet, Chayanov defended the necessity to assign property rights for peasants on the land. Chayanov argued peasants behave optimally to reach a ratio between labor and consumption. He also criticized the inability of the economic theory of the capitalist society to describe the rural economy, which he called natural economy. He considered the coexistence of several types of economies, which he called the market–oriented economy, probably the centrally planned economy and the "natural economy" of rural areas.

Many facts, developments of the economic theory and more elaborated approaches make the chayanovian approach outdated. The argument of the isolation of peasants doesn't hold today: the World's

population was around 1860 millions of inhabitants in 1920, and to date it reaches 6085 millions[156]. A direct implication is that the density of population has grown at least three times in average, which reduces the relevance of so isolated rural areas as it was in Russia in the 20's of the last century. Additionally, the GDP per capita of Latin America has grown from 1644 US$ in 1930 and 6278 US$ in 2003; between 752 US$ in 1913 and 1704 US$ in 2003 in East Asia; and between 637 US$ in 1913 and 1549 US$ in 2003 in Africa[157]. These facts have strong influences on the economic structure of peasant communities. Nowadays more than 50% of the total income of rural households has origin in non–farm activities[158].

Chayanov's argument of the inability of the economic theory to account for rural economies doesn't hold anymore, since the economic theory has evolved to account for the difficulties about the relevance of discounts factors in environments with almost no market, and about the valuation in terms of prices. Discount factors are not seen as financial factors, but as subjective discounts between the present and the future. Additionally, the relative influence of prices seems to be overcome by the facts, since it seems that any household around the world participates at least marginally in the economic dynamic imposed by the capitalist world.

The communist world collapsed and the soviet contradictors of

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[156] http://www.prb.org/Journalists/FAQ/WorldPopulation.aspx
[157] http://www.ggdc.net/maddison/ Faculty of Economics University of Groningen.
[158] E. g. Reardon et. Al, 1998; De Janvry, Sadoulet, 2001; Deininger–Olinto, 2001

Chayanov lost their political power. Yet, the main message of Chayanov remains valid for the rest of the world: that the main concern of peasants' households is to survive, and that in order to achieve it (within a nowadays language) peasants deploy economic strategies focused on the provision of a stable pattern of consumption. Today the reason of the survivor nature of peasants is their incapability to accomplish other goals different of surviving from their available means and endowments, and from the unreliability of measures aimed to cope with market holes.

4.4.2 The Semi–Tribal Peasant of Polanyi

The main claim of Karl Polanyi and development anthropologists was the dismantling of the social structure of rural communities by forces of the market–oriented economy. In rural communities predominated a social structure in charge of the economic allocation of goods. And that the market–oriented economy eroded this social structure since the economic relationships determined the social structures. The today's rural world seems sufficiently influenced by the market oriented economy and the dismantling warned by Polanyi seems enough advanced to consider it as the way in which rural communities share and allocate their resources. But the dismantling of the social structures has not reached the rural institutions aimed to share risks. The rural arrangements today known as risk sharing institutions remain.

The remains of what Polanyi and other development anthropologists called the social structure in charge of the economic allocation today are known as the rural institutions for sharing risk. The modern

economic language accounts for these structures in a different way. Polanyi and his colleagues defended these structures not only from their economic function, but from their cultural value. Economists do not care as anthropologists or sociologists, such cultural forms if they don't hold an economic function. Yet the survival of these communal forms after the dismantling evidence they indeed had an economic function that the economists blind with development during the forties didn't want or couldn't appreciate. In fact, the current research in rural areas is basically focused on the microeconomics of risk sharing institutions[159].

4.4.3 The *Safety–First* Peasant

The scholars of the safety first rule got right by asserting that peasants try to maximize their chances to survive[160]. Indeed, the safety–first approach gained a considerable credibility as foundation for some stylized facts like the unresponsiveness of peasants to policy incentives or the rejection to new technologies.

The safety first rule gave support to the subsistent behavior of peasants. It argued that peasant engage in fixed and well known strategies aimed to produce the subsistence consumption of the rural household. This approach considered that peasants as risk averse actors do not respond to incentives because they act only in safe activities. It considered peasants as survivor actors but didn't treat

[159] Barret et al 2001; Fafchamps et al 2002; Murdoch 2002; Hemskerk et al 2003; Skoufias 2007.
[160] Shahabuddin 1986.

them consequently: that they act in front of risk depending on their situation. If peasants aim to produce the subsistence consumption, what would be the peasants' behavior if the production does not reach such level? This question also applies to the risk averse peasant. But Binswanger (1980) showed the safety–first to be wrong for predicting actual peasants' behavior.

4.4.4 Sandmo's Contribution

Under the title "the effect of uncertainty on saving decisions", Sandmo (1970) explored the connection between risk and consumption in time, as the basis of the rationale of survivor behavior. He develops a model of utility with two variables: the consumptions of today and tomorrow. Additionally, he considers two types of risk: the risk of income, which relates to the risk of falling under a certain minimal level of consumption; and the risk of capital investments, which relates to the risk of capital losses. The most important conclusion of Sandmo is that the increased uncertainty about future income decreases consumption by increasing savings. Additionally (p. 357) "an increase in the degree of risk makes the consumer less inclined to expose his resources to the possibility of loss". His contribution for survivor actors was that *increased uncertainty about future income decreases consumption* (p. 356): i.e. that consumption does not correlate with income. Block and Heineke (1972) extended the analysis of Sandmo to the uncertainty on savings.

4.4.5 Food Security and Livelihoods

This thesis limits to consider the problem of peasants' development from an economic perspective. The thesis relies on economic descrip-

tions for proposing at the end a normative statement for survivor actors. It makes to consider other modern normative approaches like food security or rural livelihoods just marginally.

Food security addresses a fact, but it is above all a normative approach. It refers to all the social and economic aspects of the smoothing of consumption, e.g.. the survivor motive. The descriptive part of the movement of food security is the survivor motive actually. Nowadays scholars recognize without doubt the central role of the securing of a smooth horizon of consumption.

On the other hand, the movement of rural livelihoods has lent some values about the rural life that support the idea that peasants aim to have a living rather than pursuing development. Even though there are certainly coincidences, an identification of the survivor peasant with the normative theory of rural livelihoods may be misleading. For this reason this thesis avoids further mentions of the likely similarities of the livelihoods with the survivor peasant.

4.5 Survival and Development

The survivor peasant clears of disdainful adjectives the analysis of his behavior. Peasants are efficient and act strategically for surviving. The survivor peasant shows their stylized behavior is coherent with an economic goal.

Additionally, it has been shown that many prominent scholars and economists have proposed views of the peasants that coincide in purpose with the description suggesting their survivor nature. The

survivor peasant adds the analysis of risk and the smoothing of the consumption as the central elements that define and allow to describe the survivor behavior.

These aspects of the discussion may give room to suspect that the survivor peasant embodies normative values. But this is not the case. The description of peasants as survivor actors does not aim to defend a sociological status to argue that development is unfeasible for rural actors. Peasants are survivor actors just because their physical and economic means, their endowments, the development of the economy of rural areas, do not allow to embrace other objectives than surviving. The assertion that peasants are survivor actors is not normative. It is not for defending a way of living, as modern approaches suggest. Instead, it is to stand out the actual concerns of an actor that does not have other chances beyond surviving.

Indeed, not all the rural actors are peasants, and some peasants have achieved to overcome their survivor nature and grown. Wealthier peasants are in position to follow development paths, but these exceptions cannot be weighed up as the general situation of the peasantry. The basic point argued here is that peasants would embrace further goals as far as the risk of consumption holes disappears. As these actors move away from risk of hunger (as they foresee a clarified horizon in consumption), their interests become similar with usual economic actors: they would care about wealth; they would probably hold decreasing absolute risk aversion and increasing relative risk aversion.

Survival is a condition that can be overcome. A vision of the real motives of rural households is required for assessing the attainability of goals at a given stage of the peasants' households. There is evidence along time and across the world's geography of the failure of measures as rural banks[161], but these types of measures are still the solutions searched for by the mainstream[162].

The claim for a renewed view of rural households' motives is not for rejecting development. However, before development a rural household should be enhanced and endowed with sufficient resources for surviving according to the strategies they use to accomplish it. If survival stops of being the challenge that the household must face, development may become feasible. However, whilst the normative analysis continue to impose the urgency of filling the usual holes of markets in rural contexts (credit, insurance and technology), the recognition of a differentiated structure of feasible options for rural development is not possible.

4.6 Chapter's Summary

This chapter deals with four basic issues: what is a survivor peasant and what characterizes his behavior, the shortcomings of the usual approach based on the utility model for describing the actual pea-

[161] For example: Basu, 1997; Shepard and Collins 1982.
[162] The sources of failures have tried to be overcome with monitoring incentives like group lending, e.g.. the Grameen Bank in Bangladesh (Besley, p. 1199) or the Puebla Project (Moscardi and De Janvry, 1977).

sants' behavior and the issues to be considered for a suitable modeling, the appearance of previous versions of the survivor peasants in economics of the 20th century, and one introduction to the discussion of survival and development, to be treated in more detail in the last chapter. The next table summarizes the exposition of this chapter.

Table 3. The Survivor Peasant

Definition	Survivor Peasants' Behavior	For a Model (Restrictions of the current Modeling based on Utility Functions)	The Survivor Peasant in Economics	Development (Towards a Normative)
Definition: Peasants aim to secure a smooth horizon of consumption, regarding risk **Key elements**: ° Smoothing consumption ° Risk **In contrast to:** ° Irrational Peasant ° Subsistent Peasant ° Developmentalist Peasant	° Negative supply response ° Preference for liquid assets ° Preference for food crops ° Savings and Loans for consumption ° Steady smoothness of consumption regarding income variability ° Risk sharing institutions for preserving consumption smoothness ° Risk behavior not ruled by attitudes toward risk or wealth	**Utility:** ° Functions of money with pervasive imperfection of markets? ° Consumption and income are not homomorphic: they cannot just be changed for modeling ° Risk attitudes (exponent) don't rule actual risk behavior **Risk:** ° Risk aversion vs. Risk behavior ° Willingness to Risk not ruled by wealth ° Risk behavior ruled by the ability to pool risk (of consumption holes)	° Chayanov (20's) ° Polanyi (40's) ° Roy (50's) ° Georgescu Roegen (60's) ° A. Sen (60's) ° Sandmo (70's) ° Livelihoods (90's) ° Food security (90's)	Survival can be overcome but should be first attended

5 ATTITUDES TOWARD UNCERTAINTY AND RISK

The next two chapters present an approach for modeling the survivor actor. This chapter presents and discusses two concepts related to uncertainty and risk, important for separating the behavior induced by attitudes and that behavior forced by actual circumstances. This chapter exposes the problems of the safety first rule and the utility model for grasping actual risk behavior of peasants. After presenting the reasons that made the safety first to fail, and from the shortcomings of the usual approach based on utility functions, the concepts of attitudes toward uncertainty and risk are presented. Based on these concepts, the next chapter models actual survivor behavior based on the insights of the Arrows–Pratt theory of relative risk aversion, and on the use of utility models.

5.1 Introduction

A theoretical approach aimed to describing the economy of the survivor actor is owed to model actual risk behavior. The chapter above defined the survivor actor and characterized his behavior. This chapter presents two concepts related to uncertainty and risk.

5.1.1 The Problem

During the 20th century there were two theoretical approaches for modeling peasants' economic behavior: the safety first rule focused on peasants, and the model of utility in conjunction with the theory of relative risk aversion of Arrows–Pratt. The safety first gained audience because it interpreted some characteristics of actors seen as subsistent from a basic motive: avoiding disaster. But the rule couldn't grasp the variety of behavioral outcomes found in peasants: the behavior predicted by Arrows–Pratt and the risk neutral or risk

lover behavior reported in several researches.

As the rule was abandoned at the 80's, the model of expected utility gained confidence and prevailed in the economic modeling of the peasant. Yet, the usual approaches based on the utility model and the function of relative risk aversion of Arrows–Pratt cannot comprehensibly describe peasants' actual risk behavior either. The utility model cannot interpret properly the risk neutral and risk lover behavior of risk–averse peasants. Aside, the Arrows–Pratt's theory has not been extended for encompassing the variables different to wealth that correlate with actual risk behavior.

5.2 The Context

At the 80's the model of expected utility became the art for modeling the economic actor in economics[163]. During the same time the utility model gained room in the description of the peasant household at the expense of the decline of the safety first rule also. The safety first rule failed to predict peasants' risk behavior. Wiens had in 1977 posed some qualms[164]. The first tests that revealed the weakness of the safety first rule came from some studies aimed to grasp the variables that correlate with actual risk behavior[165]. The definitive blow against the safety first rule came in one study of Binswanger in

[163] See Meyer (2002) for a review of the facts that made possible the utility model to prevail.
[164] See section 2.3.2.1
[165] Moscardi and De Janvry, 1977; Dillon and Scandizzo, 1978.

1980 that rejected it as predictor of peasants' risk behavior.

The studies aimed to confirm the safety first theory of peasants' risk behavior[166] were inconclusive, probably because the bet of the safety rule was to predict peasants' behavior from fixed rules. Additionally, the rule seems to have failed because it considers a random income only and not all types of economic activities, stocks, temporal mechanisms, ties or risk sharing forms used for providing and enduring flow of consumption. A basic fact of the rural household is that consumption is permanently smooth while income is variable in nature. The safety first was abandoned because it failed to predict peasants' behavior based on fixed rules. That is, the rule offers an interpretation for very risk averse peasants that do not take risks, but it cannot grasp both risky choices made by risk–averse actors, and risky choices made by wealthier households.

The safety first constituted the sole theoretic approach available at that time attempting to explain peasants' behavior from an specific motive: avoiding disaster. With its abandonment it also disappeared the unique theoretic approach attempted to model peasants' economic behavior based on specific motives. Peasants were assimilated as other actors pursuing similar goals, e.g.. raising wealth. As it has been discussed, the interpretation of peasants as rational actors that optimize their behavior for maximizing a function of utility encompasses the idea that peasants pursue development.

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[166] Shahabuddin (1986), Eswaran and Kotwal (1990)

However, the study of Binswanger (1980) that made the safety first to fail produced also evidence of the shortcomings of the usual version of the utility model for describing actual risk behavior. Later[167] Binswanger addressed some of the issues waiting for a suitable approach, regarding the nature of risk, the variables of the utility function, the expectations, and the aggregation of rules for coping with risk. Ever since, an approach that offer a comprehensive and explicative order of the elements shaping risk behavior is demanded.

In this discussion, Binswanger and Pope consider peasants as farmers and therefore their economic concerns were seen as closely – almost exclusively– related to agricultural markets, e.g.. prices, market access, etc. This approach has proved at least incomplete for assessing actual risk behavior, since many of the activities with which peasants cope with risk are not related to markets. The posterior research has revealed more details of the structure of risk in rural economies, explored the institutional arrangements used to share risk, the temporal mechanisms allocate resources, and shown that peasants care about their food security above all[168].

5.2.1 The Bottlenecks

However, there still lacks an approach that synthesizes risk behavior. The problem seems lie in the assumptions of the utility model and the function of relative risk aversion. According to these com-

[167] Binswanger, 1982
[168] Townsend 1994, Murdoch 1995

plementary views, the economic actor would respond to risk only from inner preferences expressed in concavity of the utility and characterized by the exponent of the function revealing inner attitudes. The utility model should describe actual risk behavior beyond attitudes for including both the cases in which peasants avoid any risk, and the cases in which peasants take risks as otherwise they wouldn't secure their minimal consumption.

Additionally the function of relative risk aversion refers to the actor's concerns on wealth. The function of relative risk aversion of Arrows–Pratt asserts peasants would be willing to take marginal risks that do not impact their wealth. But wealth is inappropriate for modeling an economic unit with insignificant assets. The deviation of peasants from the expected behavior can be observed in their preference for liquid assets[169]. Liquid assets are preferred because they can be transformed almost directly in consumption[170]. Wealth does not tide up the basic concerns of peasants. Any individual doesn't need wealth to survive as the peasants actually do, but no one could be even an economic actor without a minimal level of consumption. As the provision of consumption is a daily obligation, the acquisition of assets is only possible after some capacity for accumulation has been attained. Any economic actor would be concerned with wealth only if his worry about his survival is ruled out. It seems natural to acquiesce that a survivor actor regards differently one risk asso-

[169] Jalan and Ravallion, 1978; Fafchamps, 1999, ch. 3, p.40
[170] See for instance the reflection of Keynes cited in Jalan and Ravallion, 1978.

ciated to wealth than a risk associated to his consumption.

It should not surprise that the function of RRA cannot grasp the variety of behavioral risk outcomes of rural households. It is known actual risk behavior depends on several variables beyond wealth. Sandmo exposed the technical troubles that the inclusion of many variables would pose to a function of relative risk aversion[171].

The evidence shows that peasants respond to risk depending on the security of their horizon of consumption: even though peasants are risk averse they behave as risk neutral[172] or even as risk lovers[173][174]. As wealthier households are willing to take higher marginal risks[175], less wealthy peasants which –tight but safe– expect to cover their consumption needs are willing to avoid risks[176]. Additionally, peasants facing an insecure horizon of satisfactory level of consumption have to accept risky choices[177]. The first case coincides with Arrows–Pratt prediction, the second one agrees with the safety-first. The third case explains the existence of risk–averse actors willing –forced– to gamble. The last two cases are consistent with ecological literature. Caraco et al. (1980) observed that birds avoid risk when they expect to receive enough food, and gamble when they have not

[171] See section 3.4.2
[172] Antle, 1987.
[173] Henrich and Mcelreath, 2002.
[174] Bauer and Yamey (1959, p. 805) accounted for the peasants' willingness to risk.
[175] Eswaran and Kotwal, 1990; Dercon, 1998, p. 14, Rosenzweig and Binswanger
[176] Ogaki and Zhang (2001, p.515)
[177] Wärneryd (1996, p. 768) finds three equivalent types of real economic actors.

sufficient food to maintain a level of "*energy budget*" [178].

A new model has to describe actual risk behavior taking into account the actual concerns of peasants. The model has to overcome the technical difficulties of including several variables in the description of the function of relative risk aversion, and additionally explain the variables that shape actual risk behavior.

5.2.2 Premises of the Modeling

The utility model and the function of relative risk aversion of Arrows–Pratt can be extended for including the survivor behavior of the peasants. Yet, for extending both the utility model and the function of RRA of Arrows–Pratt to the analysis of the behavior of survivor actors, it is necessary to refine two elements used to model the economic actor: the concept of *attitudes toward risk* and the function of *relative risk aversion* of Arrows–Pratt.

The model developed in the next chapter lies on two premises. First: peasants behave optimally for smoothing their consumption. Here it is argued the horizon of consumption is the primary object upon which the survivor peasants measures any risk. Second: the acknowledged risk behavior of peasants does not depend on inner attitudes exclusively but on their circumstances also.

Setting the horizon of consumption as the main concern of the pea-

[178] A topic acknowledged under the "*energy expected budget rule*".

sant has two implications for the modeling. A consequence is that a more precise definition of risk is straightaway. In addition, a minimal acceptable consumption expected to be accomplished provides the basis to explain actual risk behavior of individuals whose expectations are whether below, on, or above the minimal consumption.

In order to conciliate risk behavior ruled by attitudes, and risk behavior forced or motivated by circumstances, a distinction between uncertainty and risk will be considered. More specifically, it will be necessary to consider the concept of *attitudes toward uncertainty* instead of the usual concept of attitudes toward risk.

Both inner attitudes toward uncertainty and the position of the household regarding the minimal consumption will be integrated in a function of *Willingness to Risk* (WTOR) proposed for describing in a comprehensive fashion both averse peasants that take risks, safety-first peasants and peasants that behave according the function of relative risk aversion. In the next chapter the differentiation between uncertainty and risk, and the understanding of risk as a cost will be used for describing the survivor behavior and for modeling the actor using the utility model.

5.2.3 Uncertainty vs. Risk

The discussion of what is risk about and its relationship with uncertainty has long existed. It has been tackled under two perspectives, one stressing the differences or similarities between risk and uncertainty, and another one that considers risk is a cost. Both perspectives offer important insights but incomplete elements for the analy-

sis of peasants' actual risk behavior.

Within the economic literature it is usual to find an undifferentiated use of uncertainty and risk as if they express the same thing. Additionally, although the concept of risk is broadly used and everyone holds an intuitive notion of its meaning, it uses to refer to an abstraction: very often no reference is found about what explicitly is under risk. The same applies when the analysis considers inner attitudes toward risk in the modeling of risk behavior. There is no clarity whether the actor is averse, neutral or lover to risk, or if the concept applies to uncertainty in general. Part of the failure on the treatment of risk behavior of peasants rests on the lack of a distinction between uncertainty and risk[179].

The first perspective of risk and uncertainty used in economics[180] was due to Knight (1921). It points out that the difference between risk and uncertainty lies on information. Risk refers to the *variability* of a random variable with known distribution, while uncertainty refers to the variability of one variable whose distribution is unknown. Risk increases with variance. Real cases are intermediate situations between full information and complete ignorance about the distribution of random variables. Knight's critics argue that the ignorance about a stochastic process is replaced by beliefs, and that

[179] As Taylor and Zacharias (2003, p. 197) observe.
[180] Sinn (1989, p. 17).

at the end uncertainty and risk are both the same thing[181].

For describing a survivor actor it is useful to differentiate risk from uncertainty. Yet these differences are not those pointed out by Knight. This distinction will be useful to differentiate between the risk behavior likely ruled by inner attitudes and a different risk behavior induced by actual circumstances. Since this work aims to differentiate between risk and uncertainty as Knight did, it is necessary first showing the implications of Knight's analysis for the description of the survivor actor, and then presenting the distinctions here considered appropriate.

5.3 Attitudes toward Uncertainty

Within the usual treatment of the utility model, the inner attitudes of the individual are acknowledged as *attitudes toward risk*. Regarding the discussion between risk and uncertainty, it is the time to ask about the implications, at least the connotations that the use of one or another term would bring about. It seems clear that more suggestive of what is in play, the term *risk* prevailed over uncertainty in the economic modeling of the actor. As the utility refers to the satisfaction of the actor and it is acknowledged that risk averse actors prefer lower but safer incomes, the expressions risk aversion or attitudes toward risk seem to communicate more acutely the relationship between utility and security. Risk refers to a potential negative

[181] Hirshleifer et Riley (1992, p. 9–10).

impact of a random outcome.

However, in the next paragraphs it is argued that talking about *attitudes toward uncertainty* rather than attitudes toward risk is more appropriate for modeling the survivor actor. The use of the new expression helps to separating two real aspects of risk behavior: the inclination of actor for reacting cautiously in front of uncertainty/risk, and the obligation to take risks according to the position of the household with respect to its survival. Let first consider the implications of Knight's view on the description of risk behavior.

Since risk behavior follows from inner attitudes and wealth, taking into account Knight's argument would lead to consider that peasant's risk behavior will be different if the actor holds a view of the variability of the process, as if he does not know anything about it. In principle and in agreement with the theory of asymmetric information, choices would be different depending on information. Peasant would be more willing to choose a risky decision if he knows something about the distribution, and that he would be less willing to gamble if does not know anything about the distribution.

But the intuition may lead the analysis to fail if the survivor motive is not included. Without seriously considering actual circumstances in the modeling of risk behavior, the analysis is forced to assume that the only possibility for a risk averse actor is to refuse risk.

Let consider two situations. In one, the peasant does not have any information about the statistics of the variable but additionally his

gamble does not produce any real loss. Consider for example the adoption of a technology totally unknown by the peasant. In the second situation the peasant is familiarized with the distribution of the stochastic variable, e.g. weather, but the output potentially harms his survival. Consider for this case the choice between a profitable but risky crop and a low risk but low profitable crop. Let consider that if the profitable crops fails, the survival of the household is threatened. While the peasant is totally new about the technology, he has experienced during his lifespan the weather cycles. He is familiarized with the weather's variability and average.

The adoption of a new technology seems a problem of lemons in which the buyer is willing to risk money below the market price due to incomplete information. The peasant would be willing to buy the new technology but also to pay less for the risk. However, it's one thing to hold beliefs from previous experiences or advertisement like in the case of cars, and another to ignore everything about it. Yet, if the adoption relies on the information only, even with beliefs, the difference between these two situations would root in the *confidence on the beliefs* that the buyer may hold on the product. Though in both cases information is incomplete, the buyer would have more confidence on his beliefs about e.g.. a given brand, than on a totally new technology. Information matters. Hence, there exists a difference between knowledge and beliefs, which gives some support to Knight.

5.3.1 Uncertainty and Surplus

Yet, is it the rationale followed by a survivor actor? What is the risk

involved in the situation? A different reasoning takes place if the survival of the household is in play. For addressing the decision of a survivor actor, let consider that the adoption of the new technology does not harm the survival of the household, e.g. if the investment is lost, the status quo of the peasant is not going to be decreased[182]. That is, the peasant is gambling a surplus.

But, even peasants have surpluses as labor that they are in position to bet. For instance, under pervasive unemployment leisure time becomes a surplus. Under harsh imperfections, time is a surplus because its opportunity cost is zero. It also can apply to the opportunity cost of capital assets. In general, an asset for which there is no market becomes a surplus. This was the assumption of development theories of the 60's about the possibility to industrialize third world without harming the production of countries whose economy depended on agriculture[183].

Coming back, if the case is that the acquisition of a new technology puts under risk the value of the investment but nothing else (e.g.. the opportunity cost of the investment is zero), then the player remains the same as before despite the loss. The gamble does not impact the status quo of the household. If the technology works reliably

[182] Evidently, such hypothetical case does not apply to poor actors. Money or the outcomes of their labor are by no means a surplus for peasants. Peasants are indeed differentiated of other actors by their poverty. If there is something that prevails among peasants is their hardship. Yet, the discussion here is about the implications of the concepts, and the assumptions though unrealistic, are valid.
[183] See section 2.4.3

the peasant gains; but if not, everything would continue the same. If this is the case, one might admit that there is no risk involved at all, because the gamble doesn't harm anything more than the surplus betted. There is not risk since the opportunity cost of a surplus is zero. A peasant that gambles his surplus time is not posing any risk to his status quo, e.g. his survival, since the bet of a surplus does not have economic negative consequences.

The observation matters as this could be the actual situation of experiments in which peasants are invited to bet in games their time for revealing their inner attitudes toward risk[184]. Certainly in these games peasants are revealing inner attitudes, preferences, fears, moral convictions, etc. However, it is hard to agree that these choices reflect attitudes *toward risk*, since there is no risk involved in the decision.

It is true that once in the game, if the peasant gets money dropped from heaven and is forced to gamble, he will be more cautious as if he has nothing and gets the chance to earn something he hadn't before the game. High payoffs represent gains for peasants participating in experiments actually, but failing or betting low payoffs don't make the household worse off. The issue is that these potential gains or losses are not affecting negatively the status quo of the household.

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[184] As for example those practiced by Binswanger (1981), but also in many other experiments.

Regarding that gambling a surplus does not bring about any risk, peasants do not reveal inner attitudes toward *risk* in situations like economic experiments. A survivor peasant would consider differently an uncertain choice if his survival is in play. For the case of bets of surpluses, it would be more appropriate to call *attitudes toward uncertainty* to the personal characteristics revealed in these decisions. The bet of a surplus will reveal basically whether the player is averse, neutral or lover to uncertainty.

Whether the peasant is familiar with the stochastic process, whether he holds beliefs about this process or doesn't know anything about it, if the gamble doesn't harm his survival and only a surplus is in play, there is no real risk for the household. If the outcome of the random variable doesn't impact the status quo of the household, e.g. via the production, one would expect for one game the peasant to rely on inner attitudes toward uncertainty, provided complete information as in games. In general, gambling a surplus will reveal inner attitudes toward uncertainty and knowledge.

Hence, it pays to acknowledge a difference between uncertainty and risk. Uncertainty as linked with information would not bring about further insights at least for the analysis of survivor actors. The definition of uncertainty would not be attached to information as Knight suggested. Instead, the notion of uncertainty would be linked to the concept of surplus. Uncertainty refers to unknown outcomes of random variables with impacts on surpluses only.

5.4 Risk and Survival Motives

In order to appreciate what a real risk is for a survivor actor, let consider the second situation of a decision about the type of crop to be planted for the coming season. As it is real, let consider the set of choices are a crop sensible to weather changes but more profitable: a marketable crop; and a second crop more resistant to weather but also less commercial: a food crop. The case of the decision between a commercial crop and a food crop is more realistic and more crucial for the survival of the peasant's household.

The distinction between uncertainty and risk brought about by information does not apply here. The peasant knows the weather cycles and its variations. The fact making this situation a real risk is that the failure of the crop would produce a negative shock that threatens the survival of the household. However, it does not mean that the peasant is in position to reject the risky choice. If this is the situation the peasant is forced to face, he has to evaluate his decision more strategically. Even if he were averse to uncertainty, under which circumstances would he take the risk? What would force him to gamble? What would induce him to refuse the risky game?

For the case of survivor actors like peasants, risk has to be considered under a different basis, closer to a second perspective usual in finance[185]. Risk distinguishes from uncertainty, not from the degree

[185] Hey (1979), Stephens and Charnov (1982).

of familiarity of the peasants with the random variable in question. To become a risk, an uncertain event has to bring about a potential impact with a consequent cost. Risk can be defined for survivor actors as the exposure to an impact inflicting a cost. For being a risk, the existence of a random process is required. As the variability of the process grows the impact of an adverse outcome will be higher.

Risk has to do with the variability of a random variable, and with the impact on the survival of the household. For survivor actors, actual risk behavior doesn't follow from attitudes toward uncertainty only but from risks of starvation.

Yet for survivor actors the choice between a food crop and a commercial crop does not necessarily imply that the peasant has risk free option. It is possible that choosing the risky crop brings about a higher risk of starvation; but it is also probable that choosing the food crop puts the peasant under a comparable risk, if other economic activities do not produce the minimal acceptable consumption for the household during the cycle. That is, the risk of hunger would come whether because the risky crop creates future potential holes in consumption, or because the food crop will not produce a minimal acceptable level of consumption. Therefore, a survivor actor like the peasant does not act ruled by inner attitudes toward uncertainty only, but principally according to his circumstances. Whether he decides to take the risky crop or not, it depends on inner attitudes and

on the expectations of the household for achieving a smooth horizon of minimal acceptable consumption during the crop cycle[186].

As risk can alternatively defined as the exposure to an injury, the magnitude of a risk has necessarily to be measured with reference to something else. Risk cannot refer to the variability of a variable only. To become a risk, the random outcome has to bring about a potential negative impact. This gives sense to the expression *risk of…* The identification of the definite object upon which peasants measure their risks and make choices benefit the analysis of their decision. In financial markets where risk is defined as a cost, it is evident that risk refers to money basically: the risk of money loss. This is not the case for peasants, since within harsh imperfections, not all the economic activities of the households can be measured and compared in terms of money. If there are no markets, money cannot be eaten. For a survivor actor, risk is measured in terms of consumption, whether as the potential holes created in the expected smooth horizon of consumption, or as a level of consumption below the minimal acceptable, for surviving.

Yet, it is common to find references like risk of production, risk of prices, risk of weather. These expressions do not offer a precise reference of what is exactly under risk. For analyzing survival decisions, these expressions do not provide accurate an insight. Though

[186] The discussion refers to a crop cycle, assuming that the bulk of income or other flows to consumption are accumulated at the harvest of a crop. But the span of the cycle can be re-scaled according to the specific situation.

these expressions refer somehow to impacts, they do not make specific allusion to what is harmed. For survivor actors the ulterior references of any risk is his horizon of consumption. As it is acknowledged, peasants pursue a smooth pattern of consumption and therefore, for survivor actors without major levels of wealth like peasants, the ultimate object upon which all risks are weighed up is their horizon of consumption. The expectations about the horizon of consumption constitute the baseline on which the survivor actor assesses risk and makes choices. Survivor actors compare the cost of a risk against the horizon of consumption, whose preservation/achievement constitutes their basic motive.

For survivor actors like peasants, risk can also be defined as a potential cost produced by the impact of a random outcome that harms partial or totally a smooth horizon of the household's consumption, whether in form of eventual holes or in form of a level below a minimal acceptable consumption. Risk behavior would follow from inner attitudes, but additionally from the perception of the own ability to secure a smooth horizon of consumption.

Summarizing, for a survivor actor like the peasant, if a bet doesn't affect the smoothness of consumption (his energy budget) he will gamble depending on his attitudes toward uncertainty. If the actor holds assets, he very likely will take marginal risks that do not affect his wealth, as predicted by Arrow–Pratt. If he realizes that the gamble harms the smoothness of his consumption, he will not gamble; and if he realizes that his economic activities do not provide a minimal acceptable smoothness on the consumption for the crop

cycle, he will be forced to gamble.

For a comprehensive approach to economic behavior of the survivor peasant, the modeling should encompass both attitudes toward uncertainty and actual circumstances regarding its survivor motive[187].

5.5 Chapter's Summary

The next table summarizes the discussion of this chapter.

[187] Whether inner attitudes prevail over the demands of the circumstances is an affair beyond the interest of this thesis. antle

Table 4. Modeling Risk Behavior: the Problem and the Approach

Motives	Elements/ Rationale	Insights	Shortcomings
Safety First Rule			
Avoiding disaster	Risk ; Risk aversion / → Fixed rules	An interpretation of peasants' rejection to incentives and other risk averse suboptimal behavior Support to the subsistent peasant	No explication for decreasing relative risk aversion No explication for risk neutral or risk lover behavior
Utility Model + Theory of Relative Risk Aversion			
Maximization of Utility	Utility RRA (Arrows–Pratt) / Risk behavior ruled by attitudes & wealth	An interpretation for decreasing relative risk aversion Partial explication for very risk averse behavior Wealthier peasants behave according to Arrows–Pratt prediction	Wealth is inadequate to explain peasants' actual risk behavior No satisfactory explication for risk neutral or risk lover behavior RRA difficult to be extended for counting other variables The economic analysis ends at risk aversion
Survivor Model			
		Implications (Definitions)	
Surviving Peasants behave optimally for smoothing consumption. Risk behavior depends on attitudes but also on actual circumstances.	A function for Relative Risk Behavior / Risk behavior depends on attitudes but on actual circumstances also. Peasants behave optimally for smoothing consumption.	Uncertainty differs from risk: Uncertainty linked to surpluses, risk linked to costs. Experiments reveal attitudes toward uncertainty. *Uncertainty:* 1. Uncertainty refers to unknown outcomes of random variables with impacts on surpluses only. 2. Gambling a surplus will reveal inner attitudes toward uncertainty. *Risk:* 1. A potential cost produced by the impact of a random outcome that harms partial or totally a smooth horizon of the household's consumption. 2. The exposure to an impact inflicting a cost. 3. As risk can alternatively defined as the exposure to an injury.	

6 THE WILLINGNESS TO RISK AND THE FUNCTION OF RELATIVE RISK BEHAVIOR

This chapter develops an extension of the theories of Absolute Risk Aversion of Friedman–Savage, and of Relative Risk Aversion of Arrows–Pratt. In the first part it resumes the basics of these theories, including the safety first, in order to outline their approaches and the issues that have not been suitably grasped about the stylized behavior of peasants. After, an extension for these theories is proposed. The extension comprises a function of Willingness to Risk *and an associated function of* Relative Risk Behavior *RRB. The function of Willingness to Risk includes the ARA and the RRA, and the safety first rule as one case. The function of RRB maps the willingness to risk into risk. After empirical evidence of these functions is presented based on the Village Level Studies of ICRISAT (1485 households).*

6.1 Introduction

The purpose of this part is twofold. It resumes the theories of risk of Friedman–Savage and Arrows–Pratt in order to set out their approaches. In addition, it summarizes the stylized facts of peasants' survivor behavior that have not been suitably comprehended by these theories. This introduction serves to outlining the scope and the goal of the functions of Willingness to Risk and of Relative Risk Behavior, which constitute the cornerstone of the survivor behavior.

6.1.1 Theories of Risk

The theory of Absolute Risk Aversion of Friedman–Savage (1949) integrated the analysis of risk with the utility model, by assigning the inner attitudes toward risk to the concavity of the utility function:

$$ARA(u_w) = -\frac{u''(w)}{u'(w)}$$

The economic actors are risk averse, neutral to risk or risk lovers, depending on the concavity of their utility function.

Arrows and Pratt (1964) extended the theory of ARA for analyzing the differential behavior brought about by wealth, by introducing the function of Relative Risk Aversion RRA. Economic agents with similar ARA may behave differently in front of risk. Wealthier actors would be willing to gamble in marginal risks that do not harm their wealth. The RRA includes the ARA, but inserts wealth:

$$RRA(w) = ARA(u_w) \cdot w = -\frac{u''(w)}{u'(w)} \cdot w$$

The theory of the safety first complemented the theories of ARA and RRA. The safety first aimed to explaining peasants' reluctance to new alternatives, asserting that they follow fixed and well known rules for achieving their basic consumption safely, or as the theory said, for avoiding disaster. The above approaches constitute the theoretical framework that rules the analysis of peasants' risk behavior. As mentioned some chapters above, theses approaches leave unresolved questions[188].

[188] For a detailed description of the authors and their arguments see section 3.4.2

Unresolved Issues

First, the ARA provided the concept of risk aversion that served for explaining the undesired behavior of peasants. The lack of interest of some peasants in policy programs is argued to arise from their probable extreme aversion to risk. Risk aversion presented as the factor ruling the inefficient behavior of peasants imposes an ending point to the economic analysis. Policies work for the peasants whose risk aversion it permits. Risk aversion becomes the insurmountable problem that economic programs cannot solve.

At the end risk aversion is not different of irrationality. The irrationality was abandoned after the work of Schultz. Peasants are rational but their economies are not optimal. Schultz didn't address the problem of risk in his work of 1964. After some years risk became the central issue of peasants' economies and unfortunately risk aversion started to play the same role of irrationality for explaining their inefficient behavior. Peasants are rational, but risk averse. As the irrational actors, the risk–averse peasants do not react to incentives as expected. Risk aversion turned into a renewed notion of irrationality. Peasants don't react to policies or they react even negatively, because of their irrationality or equivalently, because of their aversion to risk.

Risk aversion and irrationality are very convenient terms for charging to the peasants with the final responsibility of the failure of development. But the history can be told differently. Irrationality and risk aversion are the recourses that stand out the incapability of our theories for accounting properly the actual behavior of the peasants.

Is it not that the extreme aversion toward risk is responsible for the incapability of development programs for creating effective incentives? It can be that our approaches cannot efficaciously grasp the driving factors of risk behavior.

Second, the theory of RRA has been extensively used for studying risk behavior of peasants' communities, in spite of the warning posed by Arrows and Pratt about the market context in which this function could be used (for utility functions of money). There are more restrictions. The RRA formulated wealth as the variable explaining relative risk aversion. But wealth is inadequate for studying agents with insignificant levels of capital assets: the differences on insignificant wealth could not explain differential risk behavior. In order to avoid the inconvenience of using wealth as variable, some authors have used other variables like consumption or income. But the interchange of wealth for any of those variables would not direct a similar analysis of risk behavior. As a result, the RRA has interpreted the behavior of wealthier peasants but couldn't grasp the risk behavior of poorest actors.

Third and probably more important, the ARA and the RRA do not offer a suitable framework for explaining the *risk puzzle* reported elsewhere. This is the case of peasants revealing aversion toward risk in experimental games that behave as risk neutral or even as risk lovers in the real life. The risk puzzle threatens more seriously the theories of risk. The use of ARA as the panacea that accounts for the unexplained behavior of peasants, and the use of RRA for analyzing risk behavior, can both be presented under several argu-

ments. For these cases, the questioning to the use of ARA and RRA is about their suitability or their precision. This is not the case for the risk puzzle. The conflict between attitudes and real behavior expressed in the risk puzzle, poses serious queries to the theory itself, since actual behavior would contradict the preferences toward risk revealed in experiments. There lacks a theoretical approach that harmonize the apparent conflict between attitudes toward risk and actual risk behavior.

Scholars recognize that the theories of ARA and RRA are insufficient. Researchers have explored other variables explaining actual risk behavior. It has been shown that the age and the education level of the head, or the income level or the quantity of land owned by the household correlate with actual risk behavior. However, it lacks a coherent approach able to integrate these findings. It is not clear whether these variables shape attitudes toward risk or they play as variables for a description of the RRA type. In particular, the extension of RRA for including other variables makes the analysis troublesome: each additional variable in one function of the type RRA would pose the question of what variable explaining risk behavior accounts for different choices involving risk[189].

Additionally it has been acknowledged that external circumstances of the household play a determinant role in actual risk behavior, for explaining the deviation of the ARA and the RRA. Masson (1972)

[189] See Sandmo (1970).

showed that risk neutral actors may behave as risk lovers under market imperfections. Eswaran and Kotwal (1990) showed that risk behavior depends on access to capital. This recognition has not advanced to a comprehensive model of risk, due to the irreconcilable separation between attitudes, endowments and circumstances.

In summary, the usual theories of risk cannot grasp adequately the stylized behavior of peasants, or pose a framework that leads the analysis to perceive these facts as contradictory.

6.1.2 Scope and Goal

Some of the above questions have been considered under the survivor motive. Here it has been hypothesized that some peasants do not participate in development programs, not because of their extreme aversion toward risk, but because of their assessment on the potential risk of these choices for the smoothness of their consumption.

Additionally, the survival motive sets the bulk of the consumption of the crop cycle as the reference for appraising risk behavior. Actual Relative Risk Behavior comes up from the balance between the bulk of the consumption demanded for the cycle and the expected inflows that could cover this consumption. Actual Relative Risk Behavior would be explained by the expectations of the households to provide the amount of inflows for securing the smooth horizon of consumption. Peasants take risks if they expect to obtain less than the demanded consumption with no risky choices. Peasants avoid risk is they expect to obtain tight but sufficient; and they will take marginal risks proportional to the surplus.

In order to explain the risk puzzle, two issues have been claimed in the above chapter. First, inner attitudes refer to *preferences toward uncertainty*, and not preferences toward risk. This conciliates revealed attitudes with actual risk behavior. Second, peasants averse to uncertainty would gamble in risky choices if their circumstances force them to risk.

Indeed, it is possible to capture in one simple function both the attitudes toward uncertainty and the relative risk behavior motivated by survival concerns. This chapter aims at showing that considering aversion toward uncertainty and the survival motive, a simple extension of the theories of ARA and RRA provides a comprehensive framework that explains all the particularities. Here it is introduced a treatable extension of the theories of ARA and RRA that explains the observed behavior and offers a framework for analyzing the drivers of actual peasants' risk behavior. Moreover, the extreme aversion toward risk –the safety first peasant– is as a particular case of the framework.

The framework is composed of two related functions: The *Willingness to Risk* ψ and the function *Relative Risk Behavior RRB*. It relies on the concepts of attitudes toward uncertainty and of risk as a cost. The *Willingness to Risk* refers to expectations and the assessments of the actor about future events regarding real circumstances (ex–ante). The function of *Relative Risk Behavior* is an observable measure of actual relative risk behavior (ex–post).

The core of the approach is that the economic actor behaves consequent with her circumstances and not only from inner attitudes. She gambles in risky choices if her circumstances it demands in order to secure a minimal level of acceptable consumption Co for surviving. The goal of survivor actors is to securing a smooth horizon of consumption. Therefore, the bulk of consumption Co to be secured constitutes a threshold for the Willingness to Risk and an indicator of the drivers of actual risk tackled.

6.2 The Function of Inflows

The function of Willingness to Risk does not take wealth as variable, but one that account for all the *Inflows* $\hat{I}_f$ of the peasant's household[190]. The function of Inflows includes income and other non market flows that can almost directly be transformed into consumption. It also includes the savings and the stocks held by the household at the moment of the decision. Since peasants aim to achieve a permanent *Inflow* of consumption, the reasoning used by Milton Friedman for the Permanent Income Hypothesis[191] applies for this variable $\hat{I}_f$.

> "*income is the sum of all the wages, salaries, profits, interests payments, rents and other forms of earnings received... in a given period of time*."

As mentioned, the variable $\hat{I}_f$ includes income as used by Friedman,

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[190] The term Inflows is the one used by ICRISAT for describing the same concept.
[191] Friedman, 1957.

other stocks or assets (liquid or productive) that can be actually transformed or used as consumption, and other transactions for which money is not used. It is convenient to express the *Inflows* as a variable normalized by the consumption to be secured Co. Therefore, the variable Inflows is indeed the summation of all the inflows divided by the basic consumption Co:

$$I_f = \frac{\hat{I}_f}{Co} \tag{1}$$

The function of *Inflows* is the independent variable of the Willingness to Risk. For economies with markets for almost all goods and services, the variable I_f represents a permanent income. For households bearing market holes, I_f includes both market and non–market activities supplying consumption to the household. Market activities include returns of crops, commercial or handicraft activities, income from capital (machines, equipment, land, house rents, etc..), income from farm and non–farm labor. Non–market activities include food crops and goods produced and consumed by the household, and gifts provided by ties or networks.

6.3 The Willingness to Risk

Let consider an actor whose *attitudes toward uncertainty* are shaped by the concavity of her utility function[192]:

[192] Since the utility if a function of the satisfaction of the actor and the basic concern

$$-\frac{u''}{u'} = ARA(u)$$

The function of *Willingness to Risk* is defined as:

$$\psi = -\frac{1}{2}\frac{1}{u''/u'}\left(I_f + \frac{1}{I_f}\right) \qquad (2).$$

It expresses that the Willingness to Risk ψ is inversely proportional to the aversion to uncertainty. The willingness to risk ψ increases with the expected Inflows. Yet, ψ also increases if the expected Inflows are below the minimal consumption.

From (2) it can be seen that the lineal element represents the Arrows–Pratt part of the willingness to risk ψ. As the Inflows grow, the willingness to risk grows as well. As the Inflows provide more than sufficient ($I_f > 1$), the survivor actor will be willing to gamble, according to inner attitudes toward uncertainty and proportionally to the surplus:

$$\psi_{A-P} \propto \frac{1}{u''/u'} I_f \qquad (2.A).$$

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of a survivor actor is the achievement of its basic consumption Co, her utility can be expressed as a function $U = U(C - Co)$

The safety first rule behavior takes place as the Inflows equal the consumption, i.e. $I_f = 1$. As the economic actor expects to cover tight but safe its horizon of consumption her behavior toward risk will rely on inner attitudes toward uncertainty. There are no incentives to gamble. In this case, the willingness to risk equals the inverse of the aversion toward risk. This part conciliates ψ with the RRA.

$$\psi_{SF} = -\frac{1}{u''/u'} \qquad (2.B).$$

Finally, the rational part of this function accounts for the survivor behavior toward risk. As the inflows are below the minimal acceptable consumption (i.e. $I_f < 1$), the rational part becomes relevant.

$$\psi_{Surv} \propto \frac{1}{u''/u'} \frac{1}{I_f} \qquad (2.C).$$

If the expected Inflows do not cover the total consumption ($I_f < 1$), the Willingness to Risk is higher than the level imposed by inner attitudes toward uncertainty. If the actor expects that her activities will not provide a sufficient flow of consumption she will gamble to survive. The next graphic shows the function of Willingness to Risk:

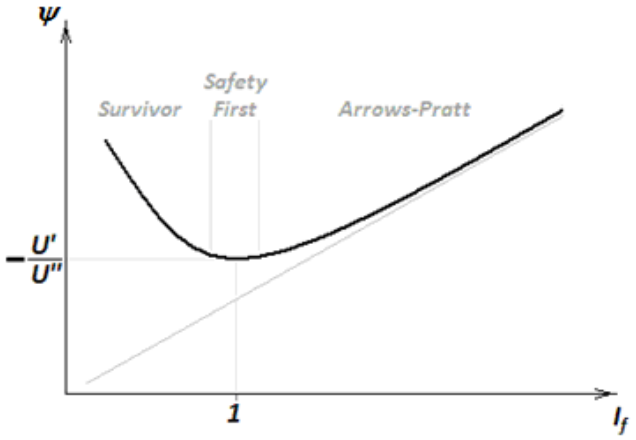

Figure 7. The Function of Willingness to Risk

Likely the Willingness to Risk is directly unobservable in experiments. The ψ behavior would be revealed in real choices after the actor appraises her situation. The Willingness to Risk is not referred to risk itself, just to the disposition to gamble. Moreover, ψ is ex-ante and actual risk observed in the variability of the outcomes can only be ex–post observed.

6.4 The Function of Relative Risk Behavior

It is possible to observe the willingness to risk ex–post, in a related function here called of Relative Risk Behavior (RRB). If we consider that the willingness to risk (ex–ante) is associated to the variability of the Inflows, the new function of RRB should be associated to actual risk. Let first consider the variability of the Inflows, expressed by the standard deviation of the Inflows, as a *proxy* ($\propto$) of ψ.

$$\sigma\left(\hat{I}_f\right) \propto -\frac{1}{2}\frac{1}{u''/u'}\left(I_f + \frac{1}{I_f}\right) \tag{2.1}$$

Risk is relative. As with the RRA, for being a risk, the variability of an outcome has to be weighed against the value of the outcome. An actor earning 1000 and gambling 100 in a dice toss risks 10%. An actor earning 100 and gambling 100 in a dice toss risks 100%. For exploring actual risk, let consider the standard deviation of the non–normalized Inflows $\hat{I}_f$ divided by the non–normalized Inflows $\hat{I}_f$. For keeping the scales, the inclusion of $\hat{I}_f$ in the left part of (2.1) is accompanied by the inclusion of the normalized part in the right side of (2.1)[193].

$$\frac{\sigma\left(\hat{I}_f\right)}{\hat{I}_f} \propto RRB = \frac{1}{I_f}\left[-\frac{1}{2}\frac{1}{u''/u'}\left(I_f + \frac{1}{I_f}\right)\right] \tag{3}$$

The function of Relative Risk Behavior is defined as:

$$\frac{\sigma\left(\hat{I}_f\right)}{\hat{I}_f} \propto RRB := -\frac{1}{2}\frac{u'}{u''}\left(1 + \frac{1}{I_f{}^2}\right) \tag{4}$$

The next graphic shows the form of the RRB that can be revealed from empirical data:

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[193] For consistency it demands the inclusion of a constant that here is neglected for the sake of simplicity.

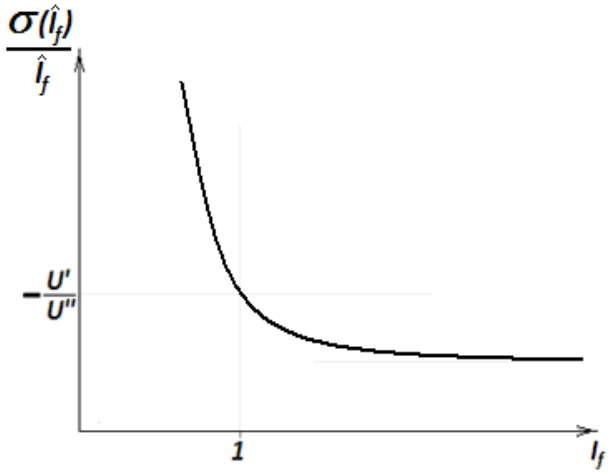


Figure 8. The Function of Relative Risk Behavior

The function of RRB expresses that if the expected Inflows are below the minimal acceptable consumption (i.e. $I_f < 1$), the economic activities of the actor pose him into higher risk. All economic activities have some risk, but if the variability of the Inflows of these activities is comparable with the Inflows, the risk of losing everything is higher. Risk is relative.

The situation of peasants with Inflows below the targeted consumption might arise whether because they choose more risky but more profitable activities for achieving the target, or just because the structure of the economy is more risky and the peasant has no other options than the activities available to him. From a reason or from the other, the conclusion is that poorest peasants are always under siege!

Empirically, if the functions of ARA and RRA work satisfactorily and there is no need for the function of RRB, the empirical data have to

show a horizontal tendency. The null slope would show that all the actors gamble marginal risks proportional to the surplus. For this case, the height of the line represents the ARA.

Yet, the survivor nature of the peasant is supported if the values of the function RRB are higher as the Inflows are close to zero. In particular, there should a point in the horizontal axis at which the function begins to grow steeply. This is the decisive aspect that has to be observed from empirical evidence in order to support the survivor peasant.

6.5 Evidence of the Survivor Peasant

Providing convincing evidence is a key aspect for the acceptance of a theoretical approach. The book of Theodore Schultz received many criticisms because of the lack of extensive evidence. It seems, the acceptance of Schultz ideas came from their sensibility, beyond the empirical confirmation. Yet, a convincing support to the survivor peasant depends on the quantity and the quality of the data.

6.5.1 Data

The empirical evidence supporting the survivor peasant presented in the function of RRB has been obtained of the Village Level Studies of ICRISAT. As it is well known, the VLS of ICRISAT are most renowned data sets of rural households' economies. The VLS data provide information of several villages in India with different agro–climatic conditions. The program started in 1975 and finalized in 1984. Six villages were covered. The program selected four types of households; classified according their land holdings, ranging from

landless households (less than 0,2 Ha) to farmers classified according different complementary criteria. For each land holding class, ten households were selected in each village. The information of each household covers its composition, personal and economic endowments, financial and capital assets, farming schedules, annual endowments, and inter and intra household transactions. It also includes rain and price data series. For a detailed description of the data, and of the procedure followed for drawing the function of RRB of ICRISAT, please see appendix # 1.

6.5.2 Empirical Evidence

With the VSL data of ICRISAT, statistics of Inflows and its variance were obtained with the help of Excel®. The total Inflows plus savings and stocks minus the expenses, were divided by the total consumption of the household. This operation produces the normalized Inflows. For computing the actual risk for each household, the standard deviation of the Inflows was divided by the non–normalized Inflows for each household. The calculated variance is likely below the actual variance, since it was not possible to calculate the covariance of the Inflows. It is well know that farm labor income correlates with crop income. In fact, part of the farm labor income of the household in the ICRISAT villages is held from intra-household activities related to agriculture[194]. Yet, this defect does not pose any query on the results. On the contrary, the calculation of the covariance would reinforce the hypothesis, since the variance would be higher.

[194] The files PS summarizing crop activities show it clearly.

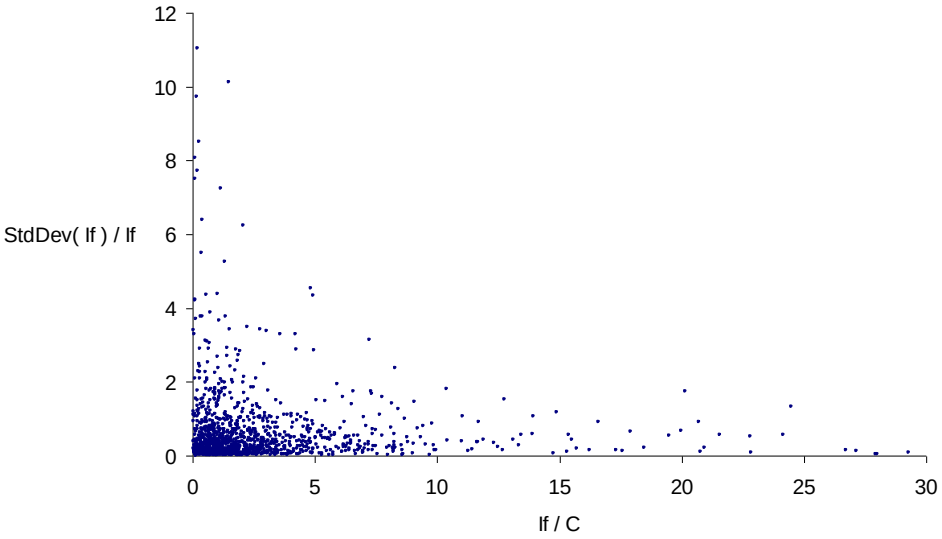


Figure 9. Empirical Evidence of the RRB at the ICRISAT Villages

The graphic consists of 1485 observations. It couples actual risk $\frac{\sigma(I_f)}{I_f}$ with the normalized Inflows. The graphic clearly presents the characteristics expected for the survivor behavior. Additional to the support that this graphic gives to the theory of the survivor peasant, it also constitutes a outstanding evidence for the extension of the theories of risk proposed by the function of Willingness to Risk and the function of RRB. A function of the form below was searched:

$$y = A\left(1 + \frac{B}{x^{\alpha}}\right) \tag{5}$$

With the help of SPSS®, the obtained function was:

$$y = A\left(1 + \frac{B}{x^{\alpha}}\right) \tag{6}$$

ARA, RRA and RRB

The function of RRB is consistent with the theory of RRA of Arrows–Pratt. This conformity is observed in the horizontal tendency of the data as the normalized Inflow grows.

Additionally, the function of RRB is consistent with the theory of ARA of Friedman–Savage. This theory asserts that inner attitudes determine the willingness to risk. According to the exposition of equation 2.B, as the inflows are close to the survival level, the willingness to risk is proportional the inverse of the inner attitudes toward uncertainty. In the function of RRB, as the Inflows are close to the survival consumption (i.e. $I_f = 1$), actual risk is the inverse of inner attitudes toward uncertainty. At this level, many households are willing t risk more, but some other are willing to risk at a minimal level. This level has been observed, as it is evident from a rescaling of figure 9.

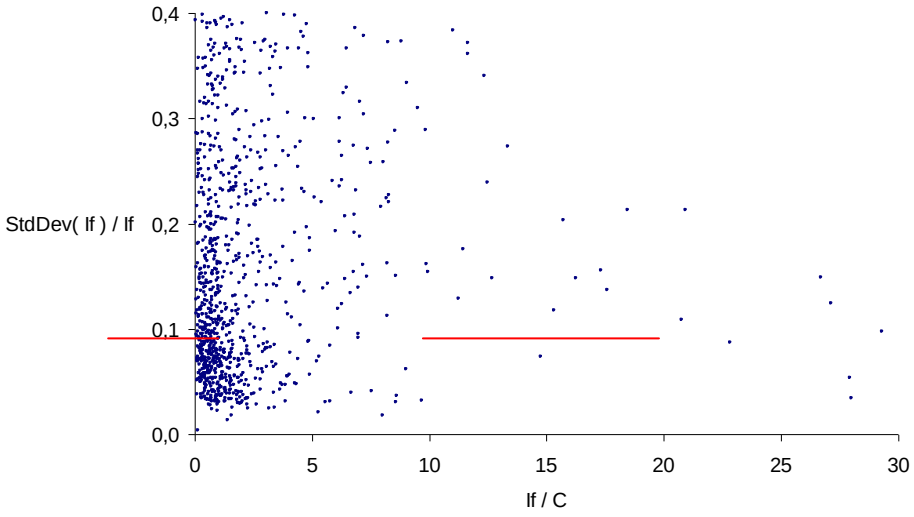


Figure 10. Level of ARA or Aversion to Uncertainty

Figure 10 shows the existence of a minimal average level of uncertainty that cannot be overcome. It shows that all the Inflows have a certain level of risk. This level could be interpreted as inverse of the aversion toward uncertainty. The empirical evidence of figure 10 also provides additional evidence for the model of utility.

6.6 Summary of the Chapter

This chapter extends the theories of ARA and RRA with two functions ψ and RRB.

The function ψ describes the Willingness to Risk of the economic actors, depending on the expectations about the ability for securing the bulk of the consumption of the crop cycle with the inflows, and actual stocks and savings. The Willingness to Risk describes the expec-

tations about actual and not hypothetical subjects. ψ is ex-ante in nature and could not be observed in experiments.

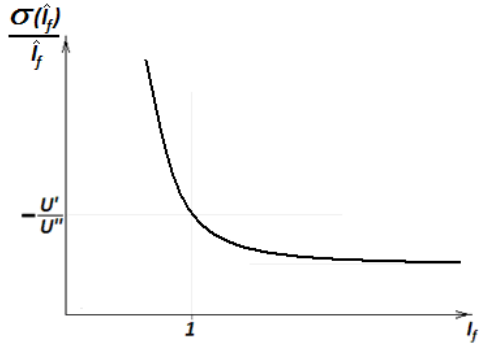
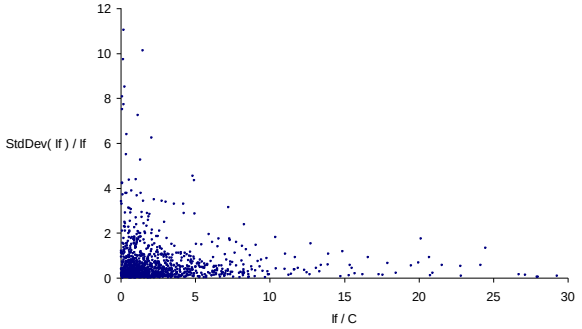
The function of Relative Risk Behavior RRB couples the ex-post balance of inflows normalized to consumption with the coefficient of variability of the inflows, i.e. $\frac{\sigma(I_f)}{I_f}$.

The empirical evidence of the VSL of ICRISAT (1485 observations) supports clearly the theory about the survivor nature of the peasants. The data also show consistency wit both the theory of ARA and the theory of RRA.

The Willingness to Risk and the function of RRB represent a consistent extension of the theories of risk, able to account for the unexplained behavior of the peasants that remained unexplained.

The next table summarizes the approach and the findings of this chapter.

Table 5. The Extension of the Theories of Risk

	ARA	RRA
Theories of Risk	$-\frac{u''}{u'} = ARA(u)$	$RRA(w) = ARA(u_w)\cdot w = -\frac{u''(w)}{u'(w)}\cdot w$
Willingness to Risk	$\psi_{SF} = -\frac{1}{u''/u'}$	$\psi_{A-P} \propto \frac{1}{u''/u'} I_f$
	$\psi = -\frac{1}{2}\frac{1}{u''/u'}\left(I_f + \frac{1}{I_f}\right)$	
	$\frac{\sigma(\hat{I}_f)}{\hat{I}_f} \propto RRB := -\frac{1}{2}\frac{1}{u''/u'}\left(1 + \frac{1}{I_f^{\,2}}\right)$	
	Theoretical Form	**Empirical Evidence**
The Function of RRB		

7 MODELING THE SURVIVOR PEASANT WITH UTILITY FUNCTIONS

This short chapter models the situation of a survivor peasant whose problem is that his savings plus the non–risky food crops provide insufficient consumption. The modeling brings some insights for policy issues, since for enhancing the abilities to survive; the productivity of food crops should be enhanced.

7.1 Introduction

This short chapter explores the use of utility functions for modeling the survivor peasant. As discussed in chapter four, the survivor peasant poses a natural challenge to the model of utility. The above chapter presented empirical evidence that would support the utility model (fig. 10). Yet, the interest of modeling the survivor behavior with utility functions is not only about its validity. The modeling provides valuable insights about normative issues.

7.1.1 Characteristics of the Model

These paragraphs present the basic characteristics and the tenets of the model.

Utility Form

Since the interest is the modeling of actors whose physical existence depends on the provision of a minimal consumption $c0$, the form adopted for the modeling is as follows:

$$U(C) = (C - c0)^{\gamma} \qquad (1)$$

Where $c0$ is the bulk of the consumption to be secured, and γ is the exponent that determines the concavity of the function. From this model, the aversion toward uncertainty is:

$$ARA = -\frac{u''}{u'} = -\frac{\gamma - 1}{C - c0} \tag{2}$$

The aversion toward uncertainty increases as the expected consumption is close to $c0$. It also decreases as $\gamma \to 1$.

The Willingness to Risk is:

$$\Psi = \frac{1}{2}\frac{C - c0}{1 - \gamma}\left(I_f + \frac{1}{I_f}\right) \tag{3}$$

ψ increases with the consumption above the survival level $c0$. ψ is not defined for actors neutral to uncertainty ($\gamma = 1$). Yet, the definition is consistent with the theories of ARA and RRA; and with the survivor peasant.

Ex–Ante Modeling

The modeling of this chapter considers only the ex–ante decisions of the peasant. In other words, it doesn't take into account ex–post decisions like risk sharing actions, credit for consumption after a shock, or any other mechanism used for covering a consumption hole. In this sense, the question of whether the peasants dies or not is ruled out. This approach seems to follow the real situation: peasants decide to participate in risky choices. If the outcome of the

random variable produces a shock, the peasant calls for help and the consumption hole is covered.

7.2 The Problem

Let consider the situation of a peasant forced to gamble in risky games because even though he is averse to uncertainty, if he rests on current savings S_0 and on a food crop Q^c, he will be unable to reach the minimal consumption C_0 for the total cycle, as the next figure shows.

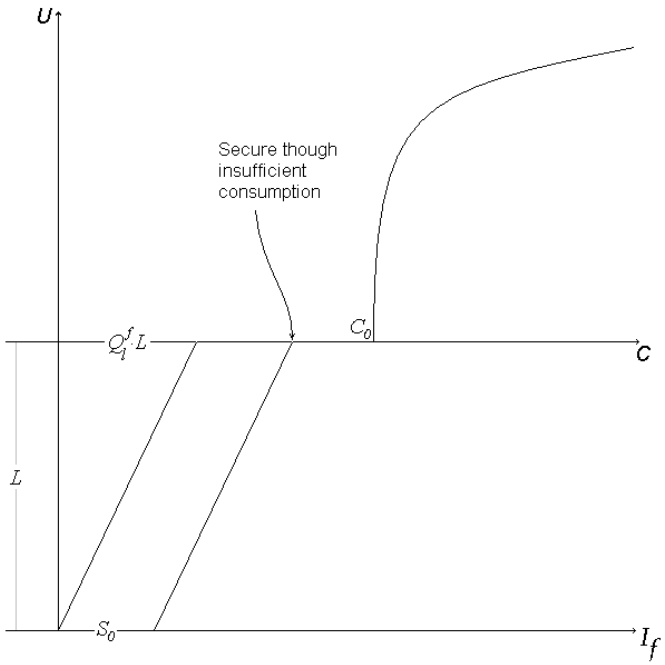


Figure 11. Risk–Averse Peasant Forced to Gamble

In principle the food crop Q^f doesn't need investments, then the production can be seen as depending on the productivity of labor $Q_l = \frac{\partial Q}{\partial L}$ and on the labor devoted to this crop L_f. The total production of food

crop can be written as:

$$Q^f = Q_l^f L_f \tag{4}.$$

As he cannot secure his survival with non–risky choices, he decides to undertake a more risky and more profitable crop Q^c that can be described with a Cobb–Douglas function for production:

$$Q^c = L_c^{\alpha} I_1^{1-\alpha} \tag{5}.$$

The variability of any crop Q^i can be considered proportional to the final output: $\sqrt{Var\left(Q^i\right)} = C_v^i Q^i$, with $0 \le C_v \le 1$. Bad weather makes C_v close to 1, and vice versa. Food crops are characterized by $C_v \sim 0$. Commercial more productive crops are more risky.

The labor time is distributed between the two crops $L = L_c + L_f$. The peasant decreases the labor for the food crop from L to L_f, and also is forced to invest an amount I_1 in this crop. Hence, he reduces his secure though insufficient consumption from $Q_l^c L + S_0$ to $Q_l^c L_c + S_0 - I_1$. He has not only to achieve a minimal consumption C_0, but to obtain additional savings I_2 for the next cycle. We consider for this model that the investment $I_2 = I_1(1+r)$. This condition secures the inter–temporal survival under expected variability. Moreover, the final Inflows have to be free of risk, e.g. they have to be planned in excess for guarantying the final output will be at least C_0 in the worst foreseeable case (i.e. with the expected variability).

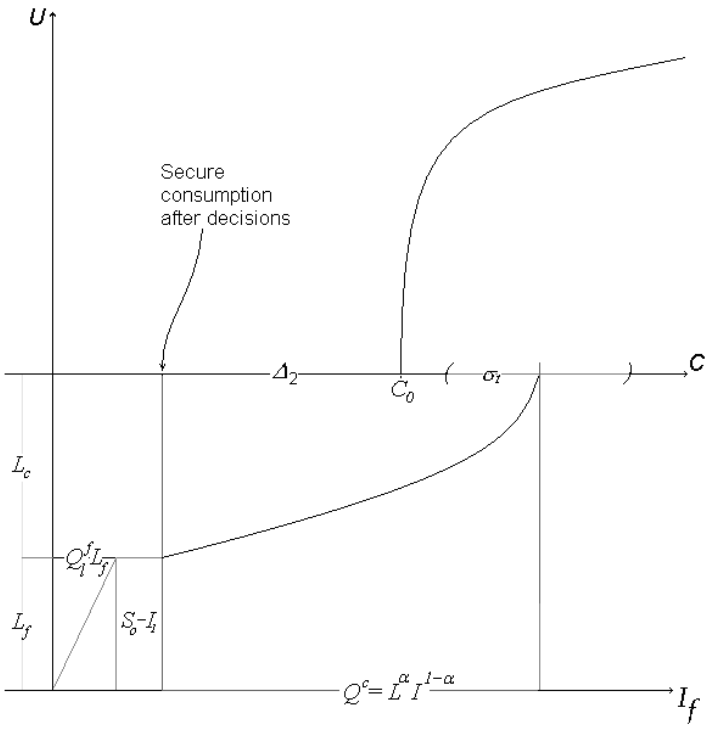


Figure 12. The Survivor Problem

It is assumed that if after allocating labor and saving in the best way for bridging the gap, the final attainable consumption is below C_0, then the peasant resorts to ties or credit for closing the gap. Yet, our interest is not to explore the singularities of the problem, but to model actual risk behavior of peasants that have to take risks even though they are risk averse, as it happens in real life where a solution exists. These elements define the optimization problem the peasant has to solve. Formally the problem is:

$$\max U = (C - C_0)^\gamma \tag{6}$$

Subject to:

$Q_l^f L + S_0 < C + I_2$ (Initial situation –Figure 11–)

$Q_l^f L_f + S_0 - I_1 + (1-\sigma)Q^c(I_1, L_c) = C + I_1(1+r)$ (Condition for inter–temporal survival)

$C \geq C_0$ (Condition for survival in the cycle)

$I_1 \leq S_0$ (Absence of markets for credit)

$L = L_c + L_f$ (Time scarcity)

The solution for this optimization problem is developed in the appendix #2.

For the existence of the optimal values (L_c^*, I_1^*), it is required (8.14) and (8.15) be positive. Since Δ is positive (figure 12), the denominators has to be positive. These conditions lead to:

$$Q_l^f < \left[(1-\sigma)\left(\frac{\alpha(2+r)}{(1-\alpha)}\right)^{\alpha-1}\right]^{\frac{1}{\alpha}} \text{ and } Q_l^f < \left[\left(\frac{(1-\alpha)}{\alpha(2+r)}\right)^{\alpha-1}(1-\sigma)\right]^{\frac{1}{\alpha}} \quad (8.16)$$

It gives rise to the general condition $r < \frac{1-\alpha}{\alpha} - 2$ and hence $\alpha < \frac{1}{3}$. These result informs that for an internal solution to exist, in which it is required to gamble in risky crops, the productivity of labor of the food crop has to be below certain threshold given by (8.16). In other words, the survivor household would not need to risk its savings if the productivity of food crops were high enough.

An outstanding consequence of this result is that for the reliable survival of the peasant household, more important than creating incentives to risky crop, it is better to grow the productivity of food crops!

7.3 Normative Implications

Though brief, the result of the modeling of the survivor actors permits to elucidate the differences between the demands of a developmentalist peasant and the demands of a survivor actor.

The developmentalist peasants would aim to maximize profits. Hw would look at the signals of the market and decide according the characteristics of its endowments, the safer commercial crop that would produce the highest profit. For a developmentalist actor, policies should improve the productivity and the reliability of risky and profitable crops.

The survivor peasant would behave differently. For him, the highest marginal utility –almost infinite– is present close and above $c0$. He would be plenty fulfilled if he gets this minimal consumption with his own efforts. The survivor peasant is risk averse, but he has to gamble in risky choices if he wants to avoid disaster. The risk for the survivor peasant is not only the gap between the safe consumption and the minimal required for surviving. Since he has to invest part of his savings or borrow, the actual gap between the safe and the consumption is much higher.

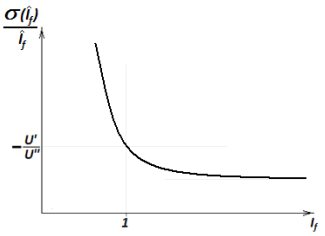
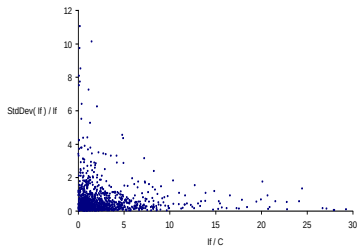
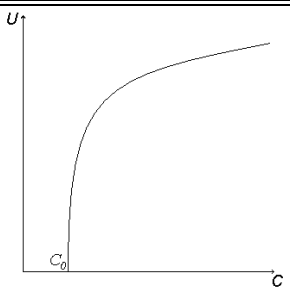
If a normative program takes into account the demands of the survivor actor, the foremost objective of a policy should be to enhance the possibilities of survivor actors for securing their minimal acceptable consumption. If a policy provides means for securing the bulk of consumption of the crop cycle, the survivor peasant would recalibrate his expectations and other more desirable objective would configure his economic problem.

SUMMARY OF PART 3

Part 1 stresses the role of the economic motive in the setting of a discourse that rules the descriptive analysis and in the emphasis of the normative analysis. Part 2 showed that the view posed by development economics led scholars to appraise peasants' behavior as irrational or inefficient, and conducts the normative analysis to the challenges inherent to the extension of markets for credit and insurance principally, disregarding other options that would help rural households to fulfill the survival demands.

Part 3 presented the description of the survivor peasant. Chapter 4 reinterpreted the so-called stylized behavior in terms of the survivor motive and argued their behavior is rational and efficient. Chapter 5 refined the concept of aversion toward risk for aversion toward uncertainty and stressed that survivor actors assess risk in terms of the horizon of consumption. The concept of aversion toward uncertainty provides the conceptual basis for differentiating between the behavior motivated by attitudes and the behavior ruled by the circumstances of the households. Chapter 6 presents an extension of the theories of risk, ARA and RRA, for including the survivor behavior in a coherent frame consistent with the usual theories. This chapter presents empirical evidence that supports the survivor peasant. Chapter 7 modeled the survivor peasant based on the utility model and showed an important conclusion for normative issues: for enhancing the abilities to survive, policies should improve the productivity of food crops in order to diminish the risk of consumption holes. The next table summarizes the findings of this part.

Table 6. The Survivor Peasant: Summary

	Securing a Smooth Horizon of Consumption	
	Implications	
The Survivor Motive	*Behavioral:* Risk behavior depends on both attitudes and on expectations about Inflows to consumption	*Theoretical:* ARA + RRA + Relative Risk Behavior from expectations on survival
	Concepts	
	Attitudes toward uncertainty instead of Attitudes toward risk	Risk as a cost Actual risk: consumption holes
	Models	
	Willingness to Risk	$\psi = -\frac{1}{2}\frac{1}{u''/u'}\left(I_f + \frac{1}{I_f}\right)$
		$\frac{\sigma(\hat{I}_f)}{\hat{I}_f} \propto RRB := -\frac{1}{2}\frac{1}{u''/u'}\left(1+\frac{1}{I_f^2}\right)$
Theoretical Approach:	Function of Relative Risk Behavior	
	Evidence	
The Utility Model	$U = (C - C_0)^{\gamma}$	

PART 4

NORMATIVE ISSUES

This final part concentrates on the problem of a normative statement for the survivor peasant and the elements of an economic program for rural areas. It also presents the conclusions of the work.

In the first chapter it was argued that the stagnation of the normative analysis is rooted in the exclusion of the motive in the economic analysis and the unquestioned assumption of development as the unique motive of economics. The entire work has explored the consequences of granting development as the motive of the peasants, both for the appraisal at descriptive instances and for the evolution of the analysis. A survivor motive brings about a new appraisal of the behavior and demands a new normativeness.

Yet, the process of setting a normative statement for the design of economic programs for survivor actors should be considered from a more general perspective. Since the universality of ends of economics is open to all kind of motives, there should exist a methodology for the identification of a normative statement from the factual evidence. A normative statement should emerge from the identification of the motive. In turn, the motive would be revealed from a non–biased appraisal of the economic behavior. This relationship, between the motive, the descriptive appraisal and the normative statement, calls for a methodological approach applicable to other motives different to survival.

Consequently, setting out a normative statement for survivor actors should follow a more general methodology and transcends the declaration of a dictate. Since the economic theory has not tackled the problem of a methodological approach for setting a normative design according to a given motive, this final part has necessarily to tackle the task of exploring the issue preliminary.

Chapter 8 explores the normative design for survivor peasants from a more general perspective. Chapter 9 closes this work with a final chapter for the conclusions.

8 NORMATIVE ANALYSIS FOR SURVIVOR ACTORS

This chapter outlines a normative analysis for survivor actors like the peasants. The new normative rule is based on the inclusion of the motive in the economic analysis, the criticism of the epistemological weakness of development economics, and on a methodological approach for recognizing the motive. The new normative approach is named "What Could Be" in opposition of the "What Should Be" that supports development. The new normative analysis calls for the attention of the actual concerns of individuals permanently besieged by starvation, and for policies focused on perdurable and reliable transformations of the economic context.

8.1 Introduction

The first chapter of this work outlined a methodological approach for the economic analysis that differs from the usual approach of positive and normative analysis. The usual approach ignores the economic motive. As the motive is excluded, a linear and conducted analysis composed of two elements is set. Since the tenets of the normative analysis are immovable, the positive analysis adopts a syntax that judges the behavior as inefficient or suboptimal. Under the usual approach, the judgments of the descriptive appraisal do not reach the normative tenets. As consequence of the autarky granted to the normativeness of what should be, the normative analysis has not evolved during the last century in spite of the evolution of descriptive theories in economics.

The approach for the economic analysis outlined in chapter one integrates the motive. Different motives would hold different normativeness. Within this approach, the normative guideline is dictated

by the motive. The descriptive appraisal should serve for recognizing the motive of the actor. Once the motive is recognized, the normativeness can be set. In turn, the recognition of the motive sheds light on the optimality of the behavior. The analysis of both the actual behavior understood as oriented to fulfill the demands of the motive, and the actual conditions, would provide insight for the design of an economic program for fulfilling the demands of the motive. This renewed perspective of the economic analysis holds the evolution of the economic motive.

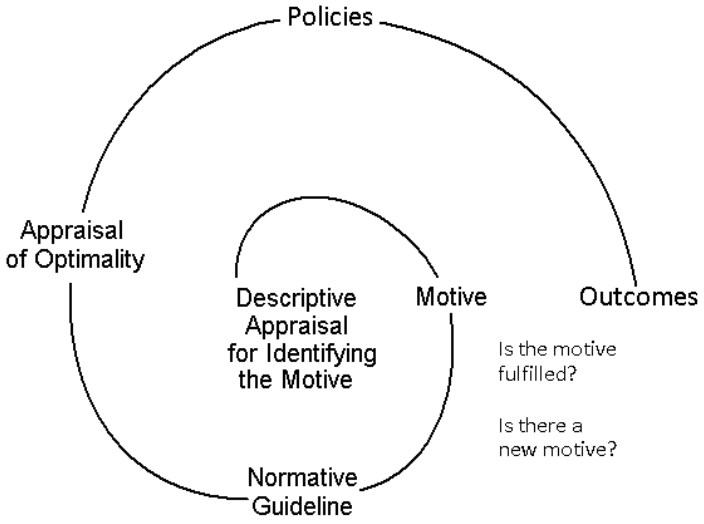


Figure 13. Evolution of the Economic Motive and Economic Analysis

Additional to the exploration of a new normative dictation for survivor actors, this chapter addresses a related issue that can be posed under a question: beyond the political struggle of the cold war that gave impetus to development as the economic objective for all nations and peoples, what other reasons facilitated among scholars and policy makers the unquestioned adoption of development as the

unique motive, abandoning the universality of ends of economics? The study of the factors that led scholars to adopt development as the unique motive for economics will provide valuable insights for a methodology aimed to identifying the motive and to identifying a normative guideline.

The chapter starts with the discussion of the Achilles heel of development economics, –the tramp that led scholars to adopt development–. The identification of the factors that lead scholars to assume a specific end serves to introduce some methodological aspects for identifying a motive and a normative guideline. These methodological aspects are valid for any motive. After, the discussion explores a normative guideline for survivor actors. The chapter finishes with some considerations about an economic program for survivor actors.

8.2 The Achilles' Heel of Development Economics

Economics bears an Achilles' heel similar to that borne by physics during the 14th and the 15th centuries. In those days, powerful actors couldn't admit that the Earth is not the center of the universe, and consequently that the mankind is not the motive of existence of everything else. The work of Copernicus was declared heretic in 1543 and the holy tribunal of inquisition legally accused Galileo in 1615. The pathway for physics cleared as men were overthrown as the reason of existence of the universe. In spite of religious pressures and beliefs, the studies based on measures, like the works of Tycho Brae served to Kepler for unveiling the mathematical relationships shaping the orbits of the Earth. Kepler's work in turn served as the pillar for the synthesis of Newton. This methodological approach, that se-

parated the scope and method of the science from personal beliefs, became a tradition and today physics is a theory that searches for describing the observable world as it is (*how* and *how much* Galileo claimed). The natural laws of the world exist beyond the beliefs about the ulterior reason of existence of the mankind. The separation between facts and beliefs triggered the development of the method and scope of physics and nowadays physicists recognize that the discussion of any *teleology*[195] of the natural phenomena is a philosophical subject. The discussion about the anthropocentric nature of the universe is an issue beyond physics.

Yet, the separation between facts and beliefs that opened the doors for physics as science is more like a cyclical illness in economics, since the subject of economics is the behavior of human beings[196]. The separation between facts and beliefs in economics is by no means attainable as it occurred in physics. Men's behavior is inherently featured by beliefs about both the ulterior goals of this beha-

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[195] Teleology. "*The theory that the cause and direction of changes in phenomena are determined by a previously existing plan or purpose, as opposed to mechanism wherein they are determined according to the laws of the natural sciences. All human actions (purposive human behavior) are teleological, e.g.., they are activated by the purpose of the actor*". As it is found in http://www.mises.org/easier/T.asp

[196] In spite of efforts of great minds in economics to make a clear distinction between the descriptive and the normative parts of economics, it seems exist a tendency to mix up them, as if both were part of the same scientific language for describing issues as they are. This struggle has been concomitant with developments in economics, as it happened with the publication of *The Scope and Method of Political Economy* of John Neville Keynes in 1891 and the *Essays on Positive Economics* of Milton Friedman in 1953. However, as the relevant literature in development economics witnesses, it uses to happen that scholars tend to lose the notion of the difference between descriptive and normative issues, as if the ways out of social problems had definite and immovable trails, as if the ways out were part of the description.

vior (*a teleology*) and a moral sense of what is right (*a deontology*[197]). Devoid of teleological and deontological nuances, men's behavior is like the mechanical behavior of robots. The social progress of robots wouldn't set out any interest for development economists, since these objects don't embody teleological or deontological attributes. The concern of disinterested economists for helping others to develop seems motivated, not by the consequences of scarcity on the physical existence of a being, but primarily by the effects of this scarcity on the realization of a plan that these economists hold as the ulterior goals of the needy. Human economic behavior holds a sense under teleological and deontological perspectives only. The concern of economists is the fulfillment of certain teleology and certain deontology. And any teleology–deontology in economics is a belief[198].

In spite of the teleological and deontological nature of economics, development economists usually don't mull over the potential distortion that comes up if their ulterior goals differ from those of the needy. Additionally, the distortion of beliefs becomes even less relevant as the problem is presented in technical terms. Economists might tend to believe that presenting a problem like the poverty of rural areas in underdeveloped countries is a description free of value, as the usual descriptions of *how* and *how much* of the natural sciences.

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[197] Deontology . "*An ethics based on acting according to duty or doing what is right, rather than on achieving virtue or on bringing about good consequences. It is too crude to make sharp divisions or to deny a place for more than one approach to ethics*". As it is found in http://www.filosofia.net/materiales/rec/glosaen.htm

[198] Adam Smith the father of economics was a prayer.

But indeed, the teleological and the deontological nuances are present in the setting of an economic problem.

An economic problem exists, as an economic unit doesn't hold some attributes judged as desirable. The setting of a problem includes in the economist or the policy maker a perspective of the solution. The setting of a problem holds a descriptive part indeed. For setting a problem however, the description is inherently presented in terms of something better. The economic problem exists so far as the economic unit lacks some characteristics considered better or ideal. The setting holds a subjective framework of comparison. Problems like the rural poverty or rural development exist under teleological and deontological perspectives only.

The Achilles' heel of the current view of development economics as scientific approach to the economic problems of rural areas of Africa, Asia and Latin America, is not the teleological and deontological nature of the economic problems. The Achilles' heel is the inexistent awareness that would warn the observer for separating between his personal teleology and deontology, of the teleological and deontological senses of the actor observed.

As the beliefs of the observer influence the setting of a problem, economics plays as doctrine not as science. This lack of awareness is responsible for the imposition of development as the motive for all the economic actors. What arguments would allow us to presume that our economic ends derived from our beliefs are the same ends held by all the economic actors? Many arguments will be claimed for de-

fending the economic program of development, but they would appeal to ethical, political and religious issues. Surely these arguments could be sufficiently persuasive for aligning the majority of opinions in favor of a desirable program. Yet, its defenders should be ready to accept that these considerations belong to the realm of ethical, religious and political doctrines, not to the realm of science.

The doctrine about the desirable ends for peasant communities of Africa, Asia and Latin America, is known as development. It states that growth and development are the unique meaningful ends. The type of growth and development that should be followed is not anyone defined by the protagonist of such development according to their ethos, context, means and feasible ways, but a course endorsed by the western culture.

> *"…development economics, … , must be concerned with the economic, cultural, and political requirements for effecting rapid structural and institutional transformations of entire societies in a manner that will most efficiently bring the fruits of economic progress to the broadest segments of their populations. It must focus on the mechanisms that keep families, regions, and entire nations in poverty traps, and on the most effective strategies for breaking out of these traps" (Todaro and Smith, 2003, p.9).*

The basic discussion is that development configures a political, ethical and religious agenda. Presented as universal for all economic actors, development economics shows a course to follow to everybody else. For actors with different motives development becomes an unsuitable approach as this work it has shown. They will not follow the course and will be judged as inefficient or irrational.

The discussion may turn into an ideological debate. For some people development is desirable while for others it may appear as an imposition. Yet, the interest of the ongoing discussion is pragmatic: the insistence on development understood as the perfection of markets in rural areas has recurrently failed. It is time to recognize that this failure is to a great extent caused by the insistency on an unfeasible program. This insistency has posed a divorce. The search has been directed to find the imperfections of the behavior, instead of recognizing its optimality according to what is feasible. Actors facing the real situation do not follow desirable pathways because they cannot. Actual behavior is expression of the borne imperfections.

However as mentioned, the recognition of other motives is natural to economics as science. If the universality of economics still applies and the scientific nature of economics can still be claimed, it is natural to ask what has to be done for fulfilling the demands of a motive. Resuming to Robbins in its seminal essay of 1932:

> *"It should be clear, therefore, that to speak of any end as being itself "economic" is entirely misleading" (p. 24).*

> *"The economist is not concerned with ends as such. He is concerned with the way in which the attainment of ends is limited. The ends may be noble or they may be base. They may be "material" or" immaterial" –if ends can be so described. But if the attainment of one set of ends involves the sacrifice of others, then it has an economic aspect" (p. 25).*

> *"Economics is in no way to be conceived, as we may conceive Ethics or Aesthetics, as being concerned with ends as such" (p.32).*

Summarizing the exposition of this section, granting development as the unique motive of economics fetters the scientific evolution of economics as science. The source of this problem is the unawareness of the differences between the motives of the observer and the motives of the observed actors. The consequences of this deformation are the distortion of the appraisal, the misguiding of the research and the stagnation of the normative analysis.

The next section synthesizes some guidelines presented for avoiding the tramp of granting a unique motive. It serves as preamble for the discussion of a normative statement for survivor actors.

8.3 For a Normative Analysis for Survivor Actors

It is widely understood that the economic description of the rural households aims to elaborate a cogent idea of how they allocate their resources. Here it has been argued that the economic actors allocate their resources according to their economic motive. An analyst should first consider the economic motive of the actor in order to appraise correctly the economic behavior, and for the design of suitable alternatives for fulfilling the demands of the motive.

An unprejudiced observer aware of the potential interference of his beliefs, about how men should be, would find sensible to consider that the cognition of the rural households' motives would be in evidence from their behavior and should not be concluded or taken as granted from his own presumptions.

If this scientific approach were followed, some important questions

arise naturally and would lead the analysis to normative issues: Do peasants strive for raising their wealth as firms do? Do they strive for subsistence? Do their struggles just serve to survive? An unprejudiced observer would naturally ask: what does make the peasants to decide among these options? Regarding that survival is not a desirable end, if a policy is for transforming the motives, and for inducing peasants into development pathways, what does it force them to follow one purpose different to development? Beyond the analysis of the motive, an important question is relevant for setting out a normative: What it happens if the external factors, that could operate a change in the motives, cannot be endurably transformed?

Motives like subsistence or development are valid as anyone else, and their demands should be attended. Economics should not judge any motive, since scientific economics has no commitments with specific ends. The recognition of a particular motive is a technical, not an ideological subject[199].

Whether the motive obeys to cultural or sociological patterns, or it is imposed by the physical–economic context in which the actor is embedded, it's an issue that leads the analysis to different courses. For the first case, as it could be the case of tribal communities that don't want to enjoy the fruits of the western development, the normativeness would aim to enhance such communities for accomplishing

[199] The dismantling of cultural values and of social tissues with economic functions, presented by Polanyi as the first victims of the developmental process prompted by the Marshall's plan, has already taken place. There is nothing to defend.

their ulterior goals. If the motive embodies a conception of the life like it turns out with indigenous peoples, the task of a normative rule should be to provide means, factors or institutions for fulfilling the demands of the motive.

For some actors, the motive reflects aspirations. But this seems not to be the case or peasants. For actors like the peasants, the motive reflects the demands imposed by permanent concerns. The survival motive seems unwanted. An undesired motive as survival is pervasive enough for forcing the actor to commit with its demands. Peasants fully engage in survival strategies just because they cannot hold a better motive. The economic agents calibrate their motives according to the possibilities of the context.

The assertion that economic actors are forced to adopt a motive in spite of its undesirability has implications about the economic freedom. It implies that men are not free to choose. This is particularly evident in imperfect economies. But the assertion goes beyond choices and encompasses aspirations. Peasants are forced to adopt the motives set as feasible by the context. The survivor actors do what they can, not what they want.

8.3.1 Motive, Behavior and Context

The assertion holds the complementarity between the motive, the behavior and the context. Survival is an undesirable motive but the survivor actor cannot just reject it. The context defines the feasible motive; and the motive rules the economic behavior.

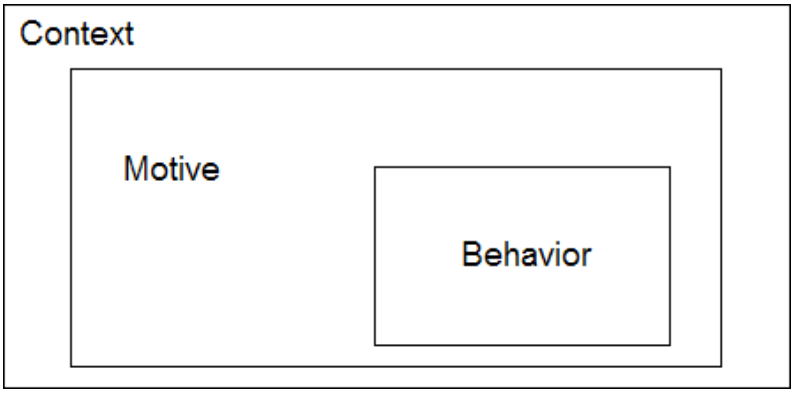

Figure 14. Hierarchy of the Context, the Motive and the Behavior

As the failure of programs for development based on the perfection of markets it shows, the transformation of a motive, responsible for the economic behavior, is only possible if the economic–physical context is transformed, or if the household is able to participate more actively in the prevailing economic context. Under this perspective, there are three possible situations: the context can be transformed by a reliable and durable strengthening of markets; the context can be partially transformed, i.e. the strengthening of some markets is feasible to last; or the context can be scantily transformed. If the context can be to some extent changed, the motive can be entirely or partially transformed. If the context cannot be transformed, why should we expect any behavioral change?

Before exploring the implications of these situations, let consider the shortcoming of the usual normative rule of "what should be".

8.3.2 Shortcomings of *What Should Be*

The basic concerns of survivor actors are not addressed by the rule of "what should be". The "what should be" rule relies on optimal op-

tions like the extension of markets for credit. The literature of the last twenty years shows that the dictate of what should be leads scholars to focus exclusively on the extension markets for credit.

Beyond any doubt, the perfection of markets for credit, insurance or technology, are optimal solutions. But the recipes of the "what should be" do not offer an integral response to households bearing pervasive barriers. The extension of markets for credit works for the share of households able to offer guarantees –e.g. capital assets–. Poor peasants do not offer the necessary backing to formal lenders. Former programs aimed to offer credit disregarding the necessary backing failed. Probably because of the demands about the optimality of the solution and because of the market nature demanded for these solutions, this failure has not induced scholars to explore other options for enhancing the survivor households. A vicious circle that the normative dictate of what should be does not work out: peasant's households cannot access formal credit markets because of their scanty wealth, and they cannot grow their wealth because of the absence of markets for credit.

But the shortcomings of the normative dictate of "what should be" are not only related to the stagnant solution. The normative dictate of "what should be" is either able to account for the concerns of survivor actors. Since the behavior of the peasants is seen as inefficient, and the unique solution aims, without success, to improve their economic performance, other options for enhancing the abilities of the household for securing their horizon of consumption are disregarded. Credit helps the survivor peasants to smooth consumption. In fact,

most of the rural credit is used for consumption[200]. But the extension of markets for credit does not help the peasants to overcome their survivor nature. If peasants were able to smooth their consumption with the allocation of their internal resources, credit would be used for other purposes, like cropping, buildings, acquisition of capital assets, etc. Paradoxically, the normativeness of what should be imposes a unique solution that does not work for development.

These two crucial shortcomings of the normative dictate of "what should be" make it unsuitable for survivor actors. Survivor actors demand policies that help them to smooth consumption, but also policies that help them to overcome their survivor nature. For survivor actors, a new normative guideline is required.

8.4 The Normative Analysis of "*What Could Be*"

Rural economies are pervasively imperfect. In rural contexts, the rule is the scarcity of markets. Accordingly, for exploring a new normative rule let consider a hypothesis opposed to the traditional "what should be":

> *The perfection of markets in rural areas of non–developed countries is unfeasible –as a rule–.*

The assumption recognizes the incapability of the usual normative-

[200] e.g. Semboya (2002, p. 6) reports 79,3% of rural credit for smoothing consumption; Nuryartono et al (2003), reports up to 60% of credit made by poor households is for consumption. There are many other reported cases.

ness for holding what is feasible and attainable in rural areas. A normative rule for the survivor actor has to consider what is feasible, rather than what is desirable; since it's proven that those ideal measures don't last. This situation impels to reformulate the usual guidelines of programs for rural development, from the traditional *what should be* –done for development–, to a new *what could be* –done for enhancing the abilities of the households for surviving–.

The "*what could be*" is not a resignation to the impracticality of development in rural areas. Above all, it is a call for attending alternative options that would effectively support the households for working out their concerns. It is not a call for considering which markets could be reliably enhanced, but a claim for considering what could be done for enhancing the survivor households for the provision of a secure horizon of consumption. The "what could be" rule calls for a differentiated approach.

It may be argued that the "what could be" limits the options for enhancing survivor households. But it's the opposite actually. The normative statement of what should be fixes the attention on the strengthening of markets, while the "what could be" calls for the extension of those markets if its success is possible. The "what could be" calls additionally for considering other options that would help the peasants to secure their horizon of consumption. The claims of the "what could be" do not exclude those of the "what should be". The normative analysis of the "what could be" widens the analysis to other options that would offer real support to survivor actors.

The "what could be" implies that the reliability of markets for credit, insurance or any other market should be assessed. Programs for the strengthening of markets should be promoted in those areas where its durability is feasible. The extension of markets for credit should not perform as a dogma that excludes the analysis of other options, as it turns out.

As mentioned above, most of the credit taken by peasants' households is used for smoothing consumption. Markets for credit help peasants households for attending the demands of the survival motive: smoothing consumption. But as the survivor motive rules the economy of the peasant household, the market for credit does not help the household to overcome its survival situation. If the credit capacity of the household is used for smoothing consumption, what other means could be claimed for a further strengthening? The extension of credits would help the households for fulfilling the survival demands only, if other alternative measures do not enhance the households for overcoming their survival situation.

The "what could be" is a call for helping the survivor household to smooth consumption, as the extension of markets for credit would do. But it is also a call for considering additional measures for overcoming the risk of starvation.

8.5 Policies based on *What Could Be*

Peasants demand policies, conceived as *sets of measures*, responsible for the production of Inflows to consumption, accumulation of stocks and assets; and for the inter–temporal and spatial allocation of con-

sumption. Policies should care for all economic, physical and temporal aspects that would enhance the households for securing a smooth and reliable consumption.

Peasants deploy different strategies for providing a smooth consumption. It is convenient to consider these strategies under two different aspects: Strategies producing and accumulating Inflows (ex–ante) and strategies for coping with consumption holes (ex–post). Policies should consider the situation of every household: whether the household is able to produce Inflows comparable to the consumption, or its optimal behavior does not yield sufficient Inflows for securing the consumption along the cycle.

Risk behavior can restrain policies if survival concerns are disregarded. Knowledge of what rules risk behavior helps policy makers to avoid undesired risk outcomes. An insecure horizon of consumption forces peasants to gamble. Subsidies and measures improving their position allow these peasants to perform with better strategies.

The consumption smoothing motive, the survival motive, is in other instances acknowledged as *food security.* It shall be more convenient to call for food security motives, since peasants are working for a secure consumption, though in time. Food security is a normative concept. It encompasses several features that consumption should hold: quality, supply reliability, etc. Though the expression *consumption smoothing* comes from the literature about strategies to mitigate risk, it seems to be the more appropriate expression to address one basic goal pursued by poor rural actors: a safe, stable and predicta-

ble as possible pattern of consumption in time.

As mentioned above, there is hierarchical relationship between the context, the motive and the behavior. The behavior responds to the demands of the motive. In turn, the motive responds to the possibilities offered by the context. The context rules the motive and the motive rules the behavior. Therefore, policies can play a significant role for enhancing the survivor households at two levels: by transforming the context as far as possible; and by enhancing the capabilities of the survivor households for attending successfully the demands of the motive, that gear their economic behavior.

8.5.1 Objectives

These two levels that policies should attend transmute into three basic goals of any program based on the normative rule of "what could be". These goals should guide the design of any economic program for enhancing survivor households:

1. To provide means and supports for easing the securing of a smooth horizon of consumption to economic actors under siege by the risk of starvation,

2. To improve the ability of the household for participating in the physical–economic context existing at the place, and

3. To enhance markets that could be endurably strengthened.

The order of the objectives does not aim to suggest what is better. Yet, this order keeps a relationship with the magnitude of the chal-

lenges to be tackled. The order also encompasses the attainability of the objectives. Policies based on the what should be rule have focused on the third objective. Theodore Schultz stressed the importance of raising the education levels of the peasants (objective two). But objective one doesn't seem to have been practiced.

Objective one relates to the ability of the household to smooth consumption, whether improving the capacity of the household for allocating inter–temporally the consumption or for assimilating shocks. Objectives two and three focus on the improvement of the economic ability of the household for producing Inflows to consumption.

8.5.2 Enhancing the Ability for Smoothing Consumption

The strengthening of markets for credit help survivor to smooth consumption inter–temporally. Any program for enhancing the ability for smoothing consumption should consider alternatives like the increase of the productivity of food crops, infrastructure for storing food, reliable production of feed for livestock, incentives for networking, the development of risk sharing strategies, etc.

Villages relying on diversifying strategies or lacking markets for groceries should be complemented with accumulating facilities. Relatively isolated households can be enhanced with low and stable prices for livestock inputs, new food crops, programs for vegetable gardens, silos, etc. Impacts of resource scarcity can be lessened with technology, e.g. efficient cook stoves for areas bearing biomass shortage, water pumps, etc.

8.5.3 Enhancing Inflows to Consumption

Policies for agriculture help to solve income problems, but ignore temporal issues: storing facilities and markets for accumulation. Food crops, commercial crops; on-farm, off-farm and non-farm labor; husbandry and handicraft activities; all these are ex–ante activities producing income or inflows of consumption. The bulk of consumption for the crop cycle[201] is produced by these activities.

With dissimilar impacts on the distribution of benefits, policies perform on the sets of independent variables: the *external context* and the *households' positions*.

Policies for widening or reinforcing the context aim to benefit the whole community, but the share of gains cannot be controlled and best–positioned families benefit more. Policies for improving households' positions control the share. For distributed impacts, policies might start with (less expensive) programs for improving households' positions, and follow with (more complex) measures for widening or reinforcing the context. If the context grows and households are able to perform fully on it, peasants would increase their chances to smooth consumption. Yet, growing the context in all directions or positioning all households for using the whole context is not feasible. It might be considered to create markets, though reinforcing those

[201] The crop cycle is taken as a reference for delimitating the lapse of time within which the consumption is produced and allocated. This lapse can be seasonal, monthly, weekly or daily, depending on the dynamics of the inflows for every household.

already existing is easier. In addition, not all measures induce the desired outputs. Existing livelihoods and funds for policies are scarce. Hence, policy makers need to understand how changes on independent variables affect the dependent ones, in order to know which measures yield more, and how avoiding restraining decisions.

Strategies are dependent variables. More than reallocating their internal resources in response to external changes, rural families reconfigure their strategies' share. Policies may force peasants to rely on riskier and non–reliable strategies, or induce less demanding plans with higher carrying capacities. Policies should provoke the adoption of reliable strategies with lower labor costs, but better strategies are more costly. Non–farm work is responsible for around 50% of total rural income, and studies show that urban markets provide a safer and higher income as household's specialization grows. Rural families should have labor surpluses for education and become able to bear its costs to increase their specialization.

Optimal strategy shares account not only for income producing options, but for accumulation. Peasants accumulate more if they have better facilities for storing or access to markets for assets. Markets for credit usually fail in rural areas due to transaction costs, but markets for livestock are resilient. Creating markets for assets demand reliable access to some resources, e.g.. land, feed or markets for complementary goods. Markets can be reinforced in many ways: with infrastructure for transportation, market places, stores, specialization of households for improving labor supply, etc.

8.6 Chapter's Summary

This chapter outlines a normative approach for survivor actors.

The normative approach is constructed taking into account three different aspects of the problem:

1. The inclusion of the economic motive in the economic analysis (Section 8.1)

2. A critical analysis of the epistemological weaknesses of development economics (Section 8.2).

3. A methodological approach that accounts for the revelation of the motive from an unprejudiced appraisal of the economic behavior (Section 8.3).

Section 8.4 presents a new normative rule for survivor actors coined as What Could Be. In opposition to the normative rule of what should be, the new rule calls for the attention of the actual concerns of peasants under permanent siege of starvation, and on effective measures for overcoming their survival stage.

The normative rule of what could be implies well defined policies (Section 8.5) aimed to:

1. enhance the ability of the households for securing a smooth and reliable horizon of consumption,

2. assess the actual possibilities of the places under study, for improving the economic context and the

9 CONCLUSIONS

This chapter summarizes and evaluates this work. As conclusions of the current work, the chapter presents the aspects that could be offer a true contribution to the economic analysis of the peasants, for improving their situation.

9.1 A Personal Digression

This work was an exercise for tracking the ideas that shape the usual view of scholars about the peasants during the 20th century, held from legacy or social heritage by the author. This work constituted an exercise for stalking and transforming personal prejudices.

These prejudices were not only about the ideas of who the peasants are, but also about the personal objectives about this work. One good day the author acknowledged he wanted to be regarded as a well intended man aiming to help the poor and needy peasants of the World. Secretly, he also held the intimate intention of getting a very good job in an international agency for development. He was at the end looking for the glory and the money.

For a long time, the ambition produced by these ideas acted as fetters. Opposed to these aspirations, at an intuitive level there was the certainty that development doesn't work for rural areas. This intuition appeared everywhere at every moment as a question: why rural development has permanently failed? This question couldn't get any answer, since any open consideration of the problem would have threatened the social dream. This work started after breaking

when the author decided to break with his social pretentions. After all the restraining ideas were abandoned, the research followed a path with joy and heart. For the author, this work constitutes a reencounter and a motive for growing as an actual, rather than a socialized man.

9.2 Contributions of this Work

This work makes contributions in four fields: the economic analysis, the economics of peasants, the economic theory and the normative analysis.

9.2.1 Economic Analysis

The contribution of this work to the economic analysis comes out from the inclusion of the economic motive into the analysis, following the scholar neoclassical tradition of Lionel Robbins about the universality of ends of economics.

The inclusion of the motive opens new ways to the descriptive appraisal of the positive analysis and erodes the autarky of the normative rule responsible for the stagnation of the normative analysis.

The inclusion of the motive also opens the economic analysis to the economic freedom, which does not rely on wealth, but on the freedom of choosing an economic motive.

9.2.2 The Economics of Peasants

This work makes a contribution to the conception of peasants as economic actors. The entire work is an argumentation about the

survivor nature of peasants. Survivor actors act optimally, rationally and efficiently, according to their motive. The interest of peasants' economics would turn around the understanding of how peasants allocate their resources according to their motive, and how policies could help them to fulfill the demands of the motive and how to overcome an undesired motive.

9.2.3 The Economic Theory

The contribution of this work to the economic theory is the coherent extension of the theory of risk for including the survivor behavior. The theory of relative risk behavior is able to explain the actual behavior that has not been satisfactorily explained up to now.

The empirical evidence supports both the view about the survivor nature of the peasants, and the theory of relative risk behavior. The economic information used for showing empirically the survivor nature of peasants, belongs the Village Level Survey of ICRISTAT, probably the most renowned database of the field.

The theory of relative risk behavior of this work is totally consistent with the theory of absolute risk aversion of Friedman and Savage, and with the theory of relative risk aversion of Arrows and Pratt. The theory is probably extendible to other economic actors and other areas of research in economics.

9.2.4 The Normative Analysis

This work proposes a new normative analysis of "What Could Be" for the design of policies for survivor actors. The normative of what

could be is a call for attending the concerns of economic actors under the risk of starvation and hunger; and for considering reliable rather than ideal but impracticable options for overcoming the survival situation of the peasants.

The normative rule of what could be includes under a more specific approach the elements of the normative rule of what should be, but extends the analysis to the attention of the urgencies of survivor actors. These urgencies are not considered under the usual normative supporting development.

9.3 Final Words

This work offers a new perspective for dealing with the economic problems of rural communities. If the work deserves some attention, it will be principally due to the failure of the usual approach for working out such problems.

This work develops a comprehensive and coherent approach ready to by challenged. The author is gratified with the coming queries and questions, because the fruits of new investigations will pave the path for the evolution of economics under a more universal conception.

Flensburg, January 30, 2009

APPENDIXES

1. Procedure and Processing of the VSL Data of ICRISAT (Chapter 6)

In short, the procedure consisted of tracking all the transactions of the households during the year. The economic structure of the household was separated into several economic activities producing Inflows: Capital assets, agriculture, labor, handicrafts (or any non crop commercial activity) and husbandry. It also considered the stocks at the beginning of the cropping year, the debts and savings.

The study tracked the inflows provided by all the economic activities of the household during one year. Each household–year was considered as one independent unit. That is, the study treated as cross sectional data the information of the VLS. With this recourse, the study got to consider 1485 households. Three variables are required: the Inflows, the total variability of these Inflows and the total consumption of the household.

Inflows

The function of Inflows was calculated as:

$$\hat{I}_f = Saving + Stocks + CropIncome + NonCropIncome + LaborIncome - Expenses \quad (5)$$

Savings and stocks are reported at the beginning of the cropping

year. Non–Crop Income comes from Capital Income, Husbandry, and Handicraft or commercial activities. Labor income comes from permanent income (i.e. permanent servants) and from non permanent income (i.e. eventual daily or seasonal work).

The variability of the Inflows does not consider the temporal variability of both Savings and Stocks, since these endowments are certain at the beginning of the cropping year. Additionally, each other variable has a different structure and therefore its variability had to be calculated accordingly. The VLS data quantifies all the transactions in monetary values, and therefore these other variables can be called incomes.

Crop Income Variability

The variability of crops was calculated from the equation of profit.

$$\pi(Q_i) = P_i \cdot Q_i - C_i(Q_i) \tag{6}$$

For calculating the variance of the profit, the output was considered as the productivity per unit of area times the area. Therefore, the profit becomes as the revenue per unit of area minus the cost per unit of area, times the cropped area. Applying the property of summation of variances, the variability of the crop profit becomes:

$$Var(\pi) = A^2\left[Var(R(\hat{q})) + Var(\hat{c})\right] \tag{7}$$

While the area belongs to the household, the revenue per area and the cost per area is in general a function of the crop. Therefore, the variance was calculated taking into account the area cropped by the

household times the average of the variance of the revenue per area plus the variance of the costs per area.

The Variability of Non Crop Income

For all other activities the variance was calculated differently. Inflows from farm and non–farm labor, handicrafts, capital and husbandry were calculated for each household and for each season. Three seasons are reported: Karif, Rabit and summer. For each season and for all the years in which the household was participating in the study, the variance of each activity was calculated. The study obtained for each household and year, the Inflows of the activity, the variability of each Inflow and the total consumption.

The calculation of the total variance of Inflows presents a shortcoming. The total variance should be calculated by summing the individual variances plus 2 times the summation of the covariance between the Inflows. This calculation was not possible to be accomplished due to the different method for calculating the variances, and due to the different sizes of samples for each activity and for each household.

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The Survivor Peasant

And The Extension of the Theory of Risk