DECISION MAKING UNDER UNCERTAINTY: A MENGERIAN ANALYSIS

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Resumen: Hayek señaló que Menger fue el primero en basar la distinción entre bienes libres y económicos en la idea de escasez. La contribución de Menger sobre el papel que juega la incertidumbre parece estar ignorada en la literatura. De esta manera, he intentado reconstruir el papel de la incertidumbre en el sistema teórico mengeriano basándome en las ideas subyacentes y a veces embrionarias de Menger. Este trabajo aclara que Menger rompió con el pensamiento económico previo y no empleó la incertidumbre para explicar y justificar el beneficio. Por último, el artículo reconstruye la Janus-faced human de Menger basándose en las dos caracterizaciones diferentes de la acción económica humana realizadas por este autor. El documento sostiene que la metáfora de la "destrucción creativa" puede dar lugar a confusión. La posición mengeriana es que la creatividad triunfa sobre la destrucción.

Palabras clave: Incertidumbre, Conocimiento, Empresario, Beneficio, Seguridad

Clasificación JEL: B13, D01, D42, D8, H7

Abstract: Hayek noted that Menger was the first to base the distinction between free and economic goods on the idea of scarcity. Notwithstanding this, Menger's contribution concerning the role of uncertainty seems to be mostly ignored in the literature. The paper argues that Menger in fact designated the place of uncertainty as a key condition to shaping human economic activities, alongside scarcity I have also attempted to provide a reconstruction of the role of uncertainty in the Mengerian theoretical system based on the underlying and

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sometimes embryonic thoughts of Menger. The paper clarifies that Menger broke with earlier economic thinking and did not employ uncertainty to explain and justify profit. Finally, the paper reconstructs Menger's Janus-faced human actor based on the two different characterizations of human economic action by Menger. The paper argues that the metaphor of "*creative destruction*" is a misleading one. The Mengerian position is that creativity trumps destruction.

Keywords: Uncertainty Knowledge Entrepreneur Profit Security

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Hayek (1934, p.18) noted that Menger was the first to base the distinction between free and economic goods on the idea of scarcity. The idea of the importance of scarcity has become so pervasive that Lionel Robbins (1932, p.16) stated that economics is "the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses".

I argue in this paper that Menger elevated the role of uncertainty compared to earlier economic literature by treating it as an all-pervasive condition of human economic action and as a key factor as scarcity.

Certainly, unlike the idea of scarcity, the concept of uncertainty was employed in economic literature well before Menger. Notwithstanding this, Menger's contribution concerning the role of uncertainty seems to be mostly overlooked, save articles of Streissler (1969, 1972). Schumpeter (1954, p.615) opined that Knight was the first to fully incorporate uncertainty into economic thinking. Knight (1921) gave only a one sentence honorary mention to Menger. Shackle (1972) and Minsky (2008, p.2) attributed the discovery of the importance of uncertainty to Keynes. Menger is hardly mentioned in connection with uncertainty even in leading publications within the broad framework of Austrian School, as *Time, Uncertainty, and Disequilibrium* (Rizzo, 1979) or in *The Oxford Handbook of Austrian Economics* (Boettke and Coyne, 2015).

In this paper, I intend to reconstruct the Mengerian insights into the phenomenon of uncertainty, and to expand the Mengerian

reading of uncertainty building on Menger's ideas, which were not explicitly stated or connected with each other in the *Principles of Economics*. In the last sections I extend the Mengerian ideas by interconnecting economic phenomena with their wider societal connotations.

The paper's structure is as follows. First, I offer an overview of the pre-Mengerian economic theories concerning the importance of uncertainty. The second chapter analyzes the role of uncertainty in the Mengerian theoretical system. The third chapter analyzes the Mengerian break with earlier economic thinking on uncertainty and analyzes why Menger did not employ the phenomenon of uncertainty as the cause and justification for profit. The fourth chapter of the paper analyzes the profit and loss system on the market in context of uncertainty and its impact on social stratification and on the political system. The fifth chapter theorizes about the implications of Menger' thought on the two major methodological debates of the Austrian School.

1. The development of the concept of uncertainty in economic literature

The discovery of the phenomenon of uncertainty in economic literature was linked to make looser or to remove ecclesial and traditional restrictions on speculation, usury and on price formation. Alanus Anglicus in the early thirteenth century argued that uncertainty is always present in the market and so risk-taking provides a legitimate basis for usury (Rothbard 1995, p.41). Thomas Aquinas, in his *Summa Theologica* also used the concept of uncertainty to legitimize that the price determined by demand and supply, is a just price (Rothbard 1995, p.53).

Centuries later, Cantillon connected the phenomenon of uncertainty to the figure of the entrepreneur (Schumpeter 1954, p.214). Cantillon (1755) divided producers into two classes: 'hired people' who receive fixed wages, and entrepreneurs, who are the uncertainty-bearers. Entrepreneurs must lay out money to launch a production, which is their fixed expense. Since sales and selling prices are uncertain and not fixed, their business income is an uncertain

residual. Cantillon argued that uncertainty borne by entrepreneurs is the consequence of a decentralized market. There is little uncertainty when an entrepreneur has a monopoly, as the entrepreneur is free to decide upon prices and production.

Cantillon molded subsequent French economic thinking (Schumpeter 1955, p.214). Turgot's capitalist-entrepreneur invested capital in production and bore the risks of uncertainty on the market (Rothbard 1995, p.395). Condillac expounded that the profits of the entrepreneur depend on the way in which he meets uncertainty and forecast future markets (Rothbard 1995, p.411). Jean Baptiste Say's concept of profit included the reward for risk taking (Knight 1921, p.25). According to the succinct summary of Rothbard, French economic thinking conceptualized that markets are not perfect, but still they are harmoniously and dynamically coordinated by two crucial elements: a price system that is free to fluctuate to balance the changing forces of supply and demand; and entrepreneurs who, in their continuing search for increased profits and avoidance of losses, perform this coordinating task (Rothbard 1995, pp.242-3).

British classical economics took a different pathway. Adam Smith's labor theory of value and his exclusive emphasis on long-run equilibrium led to the exclusion of both entrepreneurship and uncertainty (Rothbard 1995, p.511). Ricardo also neglected the importance of uncertainty and entrepreneurship. Profits, therefore, are the net aggregate returns received by capitalists. Profits are uniform since firms rapidly move out of low-profit industries and into high-profit ones until an equilibrium is achieved (Rothbard 1995, pp.280-6). A generation later, John Stuart Mill introduced the term entrepreneur into British economic thinking. In Mill's system, the entrepreneur received wages of management and further received a premium for risk-bearing (Knight 1921, p.25).

In Germany, the concept of the entrepreneur was a constant element of the cameralist tradition (Blaug 1962, p.461). The German analysis of the entrepreneurial function culminated in the work of Mangoldt (Schumpeter 1955, p.214). According to Mangoldt, the entrepreneur receives a unique payment, different from a wage. It includes 1) compensation for uninsured risk, 2) the entrepreneurs' wage and interest, especially for his extraordinary contribution as

manager and capital-provider, 3) entrepreneurial rents, which is a kind of premium on scarcity (Knight 1921, p.27).

This short review of the literature makes clear, that in the pre-Mengerian literature, the phenomenon of uncertainty was the reason given and moral reason for gaining profit, which is the core of the entrepreneurial income. The major source of uncertainty is that an entrepreneur must invest a fixed cost but cannot know the profit he will gain therefrom. Uncertainty was conceptualized as a special, uninsurable risk in German economic thinking.

2. **Menger's contributions to the concept of uncertainty**

2.1. *Uncertainty as a condition*

Mengers' investigations were strictly limited to economic actions. The Mengerian human actor acts economically, when he/she thinks that his/her well-being at any given time depends upon the satisfaction of his/her needs with economic goods and this well-being is only assured if the Mengerian actors think that they have at their disposal the goods required for the direct satisfaction of these needs (Menger 1871, p.56). Thus, Menger's investigation only covers a limited sphere of human drives and excludes non-economic urges, like love, solidarity, honor, or lust for power. This is not so because Menger was not aware that human action is not only driven by economic factors. He chose a reductionist perspective because his aim was to discover the conditions under which humans engage in provident activity directed to the satisfaction of their economic needs and to discover exact economic laws of economic action. His goal was to establish economics as an exact science of economic activity, akin to natural sciences. But he also was aware, that in any given concrete situation it is impossible to predict the exact practical economic activity of a human actor (ibid, p.48). In my opinion, the practical application of the Mengerian scheme akin to the Weberian ideal type. The usefulness of the Weberian ideal type is that it provides a measure of the distance between reality and an ideal state of being (Weber, 1922). Menger clearly expounded that his intention was not to give advice or set

"practical rules for economic activity" (ibid, p.48), but to shed light on economic laws, whose knowledge "should provide a guide to practical action" (ibid, p.45). Thus, if practical economic activity deviates from the law, this deviation is detrimental to humans striving to have access to those goods which they think are necessary for their well-being.

Menger explained the basic principles of his theoretical construction in the *Preface* of the *Principles*. He elucidated that he followed the so-called empirical method of natural sciences. The empirical method meant that he aimed to reduce the complex phenomena of human economic activity to its simplest elements that can still be subjected to accurate observation. While he followed the empirical method of the natural sciences, he was against uncritically adopting the specifics of the methodology of the natural sciences to economics. He was perfectly aware of the differences between the objects of the natural sciences and human beings. Objects of natural sciences obey to external factors, while human beings are directed by their own free will. So, the problem, what he had to solve, was how to relate the existence of economic laws to the economic behavior of human beings, who have free will. His answer was to identify those causal connections and conditions, under which the human actor is compelled to act as if he was independent of free will (ibid, p.46-9).

In this theoretical construction scarcity is one of the key conditions. Scarcity, as a condition, forces humans to make differences between free goods and economic goods. Scarcity of economic goods enforces subjective valuation of their importance. Scarcity also forces humans to accumulate wealth and property.

Uncertainty is the other key condition shaping human economic actions: "uncertainty about the quantity and quality of the product … is of the greatest practical significance in human economy" (ibid, p.71). Uncertainty triggers effects with the power of law.

Menger analyzed the role of uncertainty in the following instances, as a cause with effect of law:

— Uncertainty is the cause of the emergence of money. Uncertainty in trading of less marketable goods drives human actors to discover which good is the least likely to suffer

from such uncertainty (ibid, p.260). Money is the most tradable good, since it is most likely to be accepted in any circumstance, thus it represents the least uncertainty as tradable good.
— Uncertainty of the production process in time and space.
— Uncertainty shapes the composition of wealth and property. The key reason we amass property and wealth is scarcity. Uncertainty also conditions our endeavor to amass property and wealth, not only scarcity. His example is the practice that even healthy persons have a medicine chest at home (ibid, p.83).

2.2. *Uncertainty and risk*

Menger used the word *risk* alongside *uncertainty*. The wording of the *Principles of Economics* indicates that he differentiated between risk and uncertainty.

Uncertainty inevitably involves unpredictability. As such, exact calculations are impossible in a state of uncertainty. Menger listed a few examples of unpredictable uncertainty:

— external natural non-economic event, like weather (ibid, p.71)
— external human made non-economic event, like impact of a distant war (ibid, p.62),
— technological progress (ibid, p.68),
— change in customer taste, like growing distaste for tobacco, which endangers the chain of tobacco production and related products (ibid, p.64).
— any misuse or ignorance on the part of some members of the economy, which is injurious to others (ibid, p.105).

Menger does not explicitly mention it but following his logic an important further factor should be the "discovery of new casual connections" (ibid, p.56), and the consequent emergence of new products and services. This is a related, but a different phenomenon from technological progress. The emergence of a new product may involve the process of "creative destruction" to use the

expression of Schumpeter (1943, pp.82-3), which means that the invention of new goods makes existing goods obsolete in the same market niche.

Menger first discussed the phenomenon of risk when he analyzed the role of market research in economic life. He argued that market research may reduce uncertainty to a measurable and calculable risk by predicting the future quantity of a good (ibid, p.94). Thus, risk is an uncertainty caused by imperfect knowledge or unknown information, which knowledge could be perfected, or the information could be obtained. Thus, uncertainty could be reduced by perfecting knowledge and then it becomes a calculable factor of risk. Risk is compensated by a risk-premium based on calculation (ibid, p. 159, p. 172) Risk is subject to human calculation in the planning period of an economic action and could be expressed in quantified terms.

For Menger, one of the factors in the progress of civilization is the reduction of uncertainty to risk-taking by perfecting imperfect knowledge and making efforts to obtain previously unknown, but obtainable information. Market research is one form of knowledge extension (ibid, pp.92-4), but he also emphasized the learning process on the part of economic actors (ibid, pp.86-9). A probably even more important factor in reducing uncertainty is the phenomenon of the discovery of new casual connections, or the increasing breadth of knowledge (ibid, p.51), although Menger did not make the explicit connection between uncertainty reduction and discovery.

2.3. *The paradox of uncertainty*[1]

Menger's aim was to discover those causal connections, which compel a human actor with free will to act as they would be independent of free will in their economic actions. But for Menger, human beings are not merely blind servants of external conditions. Human economic actors are thinking and planning actors, and

[1] Although Menger applied the concept of paradox to value and the economic character of goods (ibid, p.111), he did not apply this concept to uncertainty. I am personally indebted to Brecht Arnaert (2022) for calling my attention the concept of paradox.

they do act to eliminate or reduce uncertainty by widening knowledge and by new discoveries.

But widening of knowledge also means the emergence of a wider and wider array of complex goods. Menger's argument was that at the beginning of human civilization, humans primarily endeavored to obtain simple[2] goods, which directly satisfy their needs. With the development of human knowledge, consumption goods became complex goods. Complex goods are those goods, which consist of materials, parts, and components typically sourced from far away through trade. These materials, components and parts are called higher order goods by Menger. Higher order goods only indirectly satisfy human needs, but these higher order goods are essential for producing complex first order goods (ibid, pp.56-7).

Menger opined that with the increase of knowledge, needs are also increased because of greater complexity of and greater availability of goods. Even he argued that human needs are capable of infinite growth, and the growth of needs extends the limits of goods deemed necessary (ibid, pp.82-3).

Complex goods call for extended division of work beyond the natural division of work found within small human communities. Extension of the producers' chains beyond the boundaries of a household or a closely-knit community means that time and space become a factor in production.

The rise of complex production across time and space gave rise to a new type of uncertainty. This new type of uncertainty arises from the fact that the complex first order goods, which are composed of higher order goods, are not directly produced by the final producer of the first order goods. The time "between beginning and a becoming" introduces a new factor of uncertainty (ibid, p.69). Space is a second important factor in creating new types of uncertainty. The expansion of geographic space among participants of a supply chain increases uncontrollable uncertainty as far as faraway producers are subject to different external events than producers of the same supply chain in the same geographical location. Menger brought up the example of the American civil war and its impact on British cotton

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[2] The adjective *simple* is phrasing of Hayek (1934, p.20).

manufacturing, in which case a distant war was hurting local cotton producers and disrupted the British textile industry, which relied on American cotton (ibid, p.62). Thus, any disruption of production of any higher order goods in the production chain threatens the goods-character of all other complementary higher order goods and lower order goods, while the loss of the goods-character of the lower order goods causes the loss of the goods-character of higher order goods used for producing the given lower order goods. As Menger noted, the producers of each individual article usually carry on their business in a mechanical way, and they only realize their dependence on other producers when a crisis breaks out because one of the goods in the chain loses its goods-character and consequently affects the whole chain of producers (ibid, 63).

Thus, the impact of the phenomenon of the extension of knowledge to combat uncertainty is causing a paradox as far as uncertainty is concerned. Human actors do everything to extend their knowledge, and knowledge extension eliminates uncertainty or at least reduces the impact of uncertainty to a calculable risk. But knowledge extension, with accompanying new needs, creates new uncertainties. Different ones than earlier uncertainties, but uncertainty remains a pervasive phenomenon shaping human economic acting. This is the paradox of uncertainty. Knowledge extension and discoveries not only eliminate or reduce uncertainties, but they also create new ones. Consequently, uncertainty is a pervasive factor shaping human economic behavior.

3. **Uncertainty and profit: the break with pre-Mengerian economic concepts**

In the pre-Mengerian economic literature the notion of uncertainty emerged to explain and to legitimize entrepreneurial profit and/or interest on capital.

Menger accorded a role for risk in shaping the magnitude of the interest rate, alongside time discount (ibid, p.159, p.172).

In the case of entrepreneurial income and profit, however, he broke with the earlier tradition of economic thinking. He did not employ uncertainty to explain profit and entrepreneurial income.

As a matter of fact, Menger did not put forward a comprehensive theory on entrepreneurship and entrepreneurial income and profit in the *Principles of Economics*. Nevertheless, he discussed the role of entrepreneurs and their rewards in two separate sections of the book. Based on these separate discussions, I will construct in this section a comprehensive and unified theory of Mengerian ideas on entrepreneurship. I will also give an explanation of why Menger did not use uncertainty as a key factor in explaining entrepreneurship and profit.

Menger discussed the income of entrepreneurs in two different chapters in the *Principles of Economics* as follows:

1) compensation for entrepreneurial labor service, discussed in the section on the value of complementary quantities of goods of higher order (ibid, pp.157-161),
2) profit, discussed in the sections on price formation under monopoly (ibid, pp, 197-225).

Connecting these two separate discussions, I argue that the Mengerian entrepreneur has two income sources: 1) compensation for technical labor service, whose price is shaped by factors as any other labor service or higher order goods in the market. 2) Additionally, the entrepreneur gains a profit, if he/she (or their firm) obtains a monopoly position on the market. The magnitude of profit is shaped by the rules of price-formation in monopoly situation.

Mengers's first source of entrepreneurial income is the compensation for the technical labor service of an entrepreneur. Entrepreneurial labor service includes (ibid, p.160):

1) obtaining information about the economic situation;
2) economic calculation to have an efficient production process;
3) the acts of will concerning the production process;
4) supervision of production and ensuring its efficiency.

Entrepreneurial labor service is a necessary factor of production, consequently it is an economic good and it is shaped by the prospective value of the good produced, as is the case with all economic goods (ibid, p.161).

This part of Mengerian theorizing on entrepreneurial-managerial function and income is well covered by the economic literature discussing the contribution of Menger to entrepreneurship (Boettke and Candela, 2022).

Menger, in discussing entrepreneurial labor service, emphasized that risk-bearing is not a factor in this price formation: "risk is only incidental, and the chance of loss is counterbalanced by the chance of profit" (ibid, p.161).

Profit is the second source of entrepreneurial income in the Mengerian theoretical system, which is discussed by Menger in the sections on price formation under monopoly.

The Mengerian concept of profit and its interconnection with monopoly is not discussed in the literature (see for example Schumpeter 1954, Kirzner 1978). Erich Streissler (1969, p.435) noted alone, that Menger believed that profit depends to a great extent on the various degrees of monopoly.

In the next lines, I will reconstruct the Mengerian theory of entrepreneurial profit resulting from the monopoly position of the entrepreneur.

Menger proposed that there are two types of monopoly positions possible, they are as follows:

1) Monopoly, which excludes competition due to regulation or protection of state or some other organ of society,
2) Monopoly in free markets due to special circumstances.

Monopoly which excludes competition due to regulation exists when a person is "protected from the competition of other economizing individuals by the state or by some other organ of society" (ibid, p.216). This regulative monopoly position is permanent in time. It lasts until there is a change in regulation.

Menger outlined that monopoly position was the typical position of producers before the arrival of competitive markets. He added that there may still be a remnant of this situation, the monopoly of actual situation, which can still be found in faraway villages. He thought that the monopoly of actual situation is an intermediate type of monopoly. It exists when there is no regulative barrier, but there is only one person who provides certain

goods in a locality. His example was that there is only one doctor in a village. Thus, actual monopoly exists due to the relative smallness of a particular market niche. As he succinctly noted, due to the progress of civilization and growing wealth, the monopolist of the actual situation cannot satisfy the growing requirements of society. In this situation, the need for provision of more goods calls for competition, provided there are no regulative or social barriers in the way (ibid, pp.216-7).

According to Menger, in a competitive market, a monopoly can only arise due to special causes. Menger listed three special causes: property holding, a special talent or special circumstance, even though there is no regulative barrier of competition (ibid, p.216).

Out of the three special cases, I will discuss the interrelated cases of property holding and special talent. I argue that these two cases are the embryonic discussions of inventive and innovative entrepreneurship aided by credit creation, which type of entrepreneurship later became the core of Schumpeter's entrepreneurial theory.

As far as it concerns the monopoly of property holding, as a special circumstance, the ownership of capital allows a monopolistic position to wealthy people, and their scions, as scarcity of capital, limits the entry of new entrepreneurs, and consequently limits competition. Menger opined that availability of credit opens the space for entrepreneurially minded economic actors to access to capital (ibid, p. 172). This idea later became the cornerstone of the Schumpeterian theory of capitalism, although Schumpeter did not make a reference to Menger. Schumpeter (1934) argued that credit created by the banking system out of thin air allows dynamic entrepreneurs to get access to capital goods and thus, carry out their plans. It is important to note that Menger's horizon was to a certain extent broader than that of Schumpeter. Schumpeter mainly concentrated on innovative entrepreneurs buying production goods on the market using credit. Menger emphasized that an innovative entrepreneur opens new frontiers, and not only employs already widely used production goods, but also employs goods which although were known beforehand, had not economic character (ibid, pp.54-5).

The second factor which was listed by Menger is special talent. This factor is what leads us to a new interpretation of Mengerian

thinking on entrepreneurship. Special talent in my understanding is not only special knowledge, but the talent for discovering new knowledge, previously not known "causal connections among goods and the laws they are subject" (ibid, p.56) and its implementation. This is so, because discovery of previously unknown connections and widening of knowledge is the key concept of Menger for explaining advancement of civilization. Menger clearly indicated that he was aware of that there are always first discoverers, inventors, or entrepreneurs, who trigger a new phase of development (ibid, p.154). It is logical to suppose that special talent is the predecessor of the Schumpeterian concept of entrepreneurial invention and innovation in an embryonic form, although Schumpeter (1934, 1954) did not make reference to the fact that he was expanding the theories of Menger.

So, these two factors, availability of credit to gain access to capital and special talent of inventiveness and innovativeness, allows building a theory of unusually high profit in a competitive market based on Mengerian ideas.

In a competitive market, where there is no regulative barrier to competition, the first mover advantage of inventive and innovative entrepreneurs is that it establishes a similar position to what Menger described as an actual monopoly. Menger thought that the situation of actual monopoly is largely bypassed by the progress of civilization and by the increasing depth of markets. But in fact, any entrepreneur establishes an actual monopoly who is the first to introduce a new, previously unknown good or service, or produce a superior version of a previously known product or service in a more efficient way than its competitors. Provided that the given good is a sought-after product, and consumers buy it at the price set by the innovative entrepreneur. Consequently, this innovative entrepreneur enjoys a temporal or actual monopoly and can set a high price, while there is no other producer on the market, who could sell the same or similar goods, or the same goods produced with the same or even more efficient way. In case of actual monopoly prices are governed by rules of monopoly price formation.

The unusually high profit is a premium for special talent, namely for invention and innovation, which ensures a temporary actual monopoly position.

In competitive markets this actual monopoly and unusually high profit is a temporary phenomenon. If there is no regulation barrier, at any time other entrepreneurs could enter this market niche by copying the original innovative idea or coming forward with even better goods, if there exists the possibility of big enough consumer demand on the market, which allows the estimation that it is possible the recuperation of the cost of launching a new good and gain profit. For this reason, in an open market the monopoly is temporary: new entrepreneurs can enter the market and respond to the lure of profit. Entry is made easier by the fact that typically a monopolist restricts volume of production to maintain high prices. Thus, there exists an unusually high unsatisfied demand for the monopolized goods and there is a possible pool of prospective buyers, who could not buy the monopolized goods due to its higher price and restricted production.

The consequence of the entry of competitors is price competition and the increase of volume of the given goods until the last consumer need is satisfied. As a consequence, "the provisioning of society in general becomes ever more complete." (ibid, p.224). Competition drives down the level of profit until it reaches the level of a normally profitable business (ibid, p. 188). A further consequence of competition is that it forces entrepreneurs to embark on large-scale production to be able to satisfy demand. An additional benefit of competition is that it forces entrepreneurs to reduce waste and forces entrepreneurs to constantly revolutionize production methods to be more and more cost-effective (ibid, p.225).

Thus, based on the embryonic ideas of Menger, it is possible to construct a comprehensive theory of inventive and innovative entrepreneurship. A talented person, an entrepreneur can achieve a temporary monopoly on a market niche, if he/she has an invention or an innovative idea. The resulting product or service provision ensures for him/her a first mover position in this market niche. As long as this sole entrepreneur is the only provider of the given good or service, he/she has a temporary actual monopoly. Actual monopoly enables him/her to set a high price and reap an unusually high profit, above the income which he/she would normally expect as a compensation for his/her entrepreneurial-managerial role. High price and unsatisfied consumer demand, which

are consequences of monopoly position, calls for entry of a new troop of entrepreneurs who copy the original idea and provide the same or a similar good. Although, established businesses have an advantageous position because of their accumulated wealth (capital), entrepreneurs can enter the market, where there is credit available for financing a daring entrepreneurial actor. In modern capitalism, banks are the agencies that provide credit for entrepreneurs, as a generation later was theorized by Schumpeter (1934). With the help of credit, new troops of entrepreneurs can pose a competitive challenge to the actual monopoly of an established business. Resulting competition drives down prices. Falling profit enforces elimination of waste, and forces production method innovation.

This embryonic picture of competition is similar to the concept of competition of Schumpeter. Schumpeter (1943, pp.83-4) argued that competition is not only price competition, but involves product innovation, introduction of new technology, the discovery of new sources of supply, the discovery of new markets, and the creation of new types of industrial organizations.

The economic moving force of this process is the prospect of unusually high profit, which is the reward for special talent, for invention and innovation. It is important to note that Menger also posited that human beings are not only motivated by economic rewards, but also seek enjoyment and satisfaction, i. e. fulfillment of non-economic human needs (ibid, pp.171).

Menger did not discuss the role of uncertainty regarding profit and entrepreneurship. He did not have to. It is clear from his earlier discussions he thought that risk is incidental, and that uncertainty is a pervasive phenomenon affecting any human economic activity. What is important in the case of entrepreneurship in a competitive market is the special talent, special knowledge and human qualities, which make possible the implementation of the innovative idea. The embryonic Mengerian ideas were extended by Wieser (1914, p.208) who opined that an entrepreneur must be a strong individual, who has an excess of power, vitality, and open mind sufficiently free to resist external pressures. This viewpoint was further developed by Schumpeter (1934), whose poetic words about the superhero entrepreneurial figure became the standard

model of successful entrepreneurs in the business literature. In modern Austrian literature, Huerta Soto (2010) argues forcefully that entrepreneurs are the dynamic engines of economic growth.

Monopolistic profit can be assured permanently by the state and community regulation and protectionist measures, which limits the entry of challenging entrepreneurs. These can be patent laws or other similar regulations or can be achieved through de facto corrupt relationships.

In the case of permanent regulative monopoly, unusually high profit is a consequence of restrictions on competition, and no longer a premium for invention or innovation. Thus, in reality, it is an exploitation of consumers. The monopolist can charge high prices without having to face losing consumers due to the existence of a competitor, who is ready to sell the same goods at lower price to develop his/her own business (ibid, p.212).

The wider implications of the two different monopoly positions on societal and political settings will be analyzed in the next section.

4. The profit and loss system on the market and their linkage to uncertainty: their impact on social stratification and on the political system

Menger's aim was to discover laws in the field of economics and to establish what kind of economic arrangements help most people that they can achieve a satisfaction of their needs to the extent that the general economic condition allows. He clearly stated that his major concern was the solution of problems of human welfare, which is a public interest of the highest importance (ibid, p.46). This proposition is similar to Adam Smith's concern, who also sought to ensure the wealth of nations.

The most important implicit thesis of the *Principles of Economics* is that the human capability of thinking, discovering, invention and innovation is the cause of the progress of civilization and the evolution towards an ever increasing complexity of goods and production chains through market exchanges. Consequently, competitive free markets are the best institutional environment for ensuring the goods deemed necessary for human life.

On a competitive market, unusually high profit is the reward for entrepreneurial implementation of a discovery, provided that the first mover entrepreneur offers goods which are sought after by consumers. Laws of the market allow and at the same time compel enterprising humans to discover how to economize and how to act in a way that ensures the best satisfaction of their needs and wants with goods.

Menger did not discuss the political implications of his theories. He investigated pure economic life and pure economic motivations. Menger very rarely ventured to make remarks concerning the practical implementation of his theories and rarely mentioned the extra-economic actions of humans for ensuring their requirements of goods.

In this section, building on the Mengerian theory on profit, I show how the interplay between uncertainty and extra-economic actions shape our societal and political arrangements. I argue that uncertainty is an important underlying factor in the political and institutional environment of economic action if one considers the wider social and political impact of the profit-loss system of markets and their connection to monopoly.

For Menger uncertainty and scarcity are the key conditions shaping human economic action with the force of an exact law. Uncertainty has two sources. One is imperfect knowledge; the other is unpredictable external events, including the actions of other humans.

The paradox is that the extension of knowledge and discoveries also cause new uncertainties, and not only eliminate old ones. This paradox means that while successful entrepreneurs are gaining extraordinary profit for solving a problem, established enterprises in the affected market niches are suffering losses or even facing bankruptcy. Thus, paradoxically, for the affected established businesses, one of the greatest causes of uncertainty is the possibility of competition, namely possible entry of an unexpected competitor or competitors. Uncertainty caused by competition and innovation not only endangers established businesses, but their suppliers, and their employees, thus affecting the livelihood of many families.

This is so, because a market-based economic system not only enables unusually high profit for innovative entrepreneurs, but a

profit-loss system (Mises 1949). The double sided impact of competition was well grasped by Schumpeter's famous term: "creative destruction". Creative destruction means that the incessantly revolutionary process of innovation destroys the old economic structure, while creating a new one (Schumpeter 1943, p.83).

So, the paradox of free markets is that while free-market economy is the most conducive institutional environment for the constant emergence of entrepreneurs with innovative ideas, however, for established businesses the biggest source of uncertainty is entrepreneurial innovation and competition.

Menger made clear that he was aware that established businesses intend to minimize uncertainty arising from competition. He noted that it is common that a monopolist defends "his position against the entry of a competitor in the most belligerent manner." But he also added that once the competitor has established its position, it is also common to find that they try to come to an understanding with each other to pursue a modified monopolistic policy by dividing the market among themselves. But he was also aware how difficult it is to maintain such an agreement (ibid, p.221).

The most viable way to reduce or eliminate uncertainty due to competition is to gain a permanent monopoly. In the Mengerian theoretical system, permanent monopoly is possible due to state regulation. Menger listed that legal compulsion can force inaction, namely closing the entry of competitors in certain market niches through awarding legal monopolies, regulating copyrights, and trademarks (ibid, p. 55). This regulative monopoly aims to protect established businesses from competition (ibid, p.216). In a similar way, he singled out guilds as monopolistic organizations of local producers, whose intent is to limit competition partly by internal regulation of production by their members while at the same time preventing new competitors' entry into the market (1871, p.215).

Regulative monopoly ensures not only high profit, but stability and security. Thus, there is an economic incentive and, indeed, a constant effort on behalf of established businesses to limit competition as much as possible through community or state regulation. Protective regulation makes difficult or blocks the entry of new entrepreneurs in a market niche, and this way ensures a permanent monopoly profit for existing businesses, and security for all

those who are employed or a contractual partner of a monopoly goods provider.

Karl Polányi in *The Great Transformation* (1944) argued that free market capitalism provoked the rise of popular and varied protective popular counter movements against the destructive forces and insecurity of capitalism. He argued that varied counter movements in conjunction with state interventionism are aiming to limit free trade to ensure security against the destructive forces of competition.

I argue that popular movements could arise from pro-market directions, not merely from market-controlling direction that aims to achieve protectionism as was posited by Polanyi. Thus, there are two opposing counter movements competing in any society. One for more freedom of action and consequently for freer markets and one for limiting markets and more restriction of free trade, and in its most radical form for the complete elimination of markets.

The reason for these two competing counter movements is the wider economic and societal consequences of the reality of the two types of monopoly, as described by Menger.

The regulative permanent monopoly position ensures security and stable income, which security and stability could be beneficial not only for the monopolist, but for a wider section of employees and for the supply chain partners of the monopolist. Nonetheless, a permanently monopolized market also has disadvantages. The monopoly profit is ensured and there is no compelling reason for the monopolist to make an effort to serve all needs. The high price set in a non-competitive market means that consumers in the lower income strata cannot afford to buy the monopolized goods. Also, the monopoly producer is not interested in technological or product innovation. Thus, societal stagnation is the most important negative consequence of the web of monopolies. A monopolized economy means entrenched exploitative and self-serving elites, while the rest of the population is poor or poorer than it could be in case of an open and competitive market economy and advancement is strait-jackated.

The free market makes possible the entry of competitors, which ensures a dynamic economy, steady economic and technological progress, increasing wealth and increasingly ample satisfaction of ever-growing needs. Competition fosters invention, innovation, efficient production, and the reduction of waste. Competition

forces businesses to lower their price and increase production. Thus, it enables people in the lower income strata to gain access to a wider and wider array of goods. This ensures the best possible satisfaction of individual human and wider societal needs, as far as well-being can be ensured with a supply of goods. The ever-revolutionary nature of economic dynamism blocks the emergence of entrenched oligarchic elites and opens the avenue to talented persons to social mobility. Nonetheless, the negative consequence of free markets is lack of stability and security, uncertainty, creative destruction to use Schumpeter's expression.

Thus, there are advantages and disadvantages of free markets and closed markets affecting not only elites, but large swathes of the population. Consequently, there are popular movements both for and against free markets or protectionism.

There are always people with entrepreneurial traits who are in favor of free markets. There are always those who are dissatisfied with a life in a straitjacket and of being exploited by entrenched elites. There are always those who want freedom, who want to live better, who want to realize their ideas and dreams. Furthermore, every regulated and stagnant order limits prosperity. There are always dissatisfied people, who blame their misery on the oligarchic order, which exploits the fruits of their labor. Additionally, the entrenched elites themselves may have an interest in a freer market, due to a desire to have access to luxuries produced elsewhere and to gain extra income to cover their luxurious consumption.

On the other hand, there are always people who want more security, order, stable income, and stability by limiting competition and ensuring a permanent monopoly position for themselves. They vie for community regulation or state intervention to limit free markets and create a protected monopolized economy and society, with well-established order and with least possible disturbances of economic life.

The relative influence of the contesting pro-market and protectionist popular movements is decided by the position of ruling political elites, who dominate the state machinery with its immense power over society. If a compromise between the two is not achieved, there is a potential for a coup or a revolution, and a one-sided win of one over the other.

Political elites are as divided as society itself as to adopt a protectionist and oligarchical order or to opt for a freer and more dynamic order, which disturbs traditional oligarchies and stability.

On the one hand, they vie for stability of the internal order and well-established hierarchical order and societal stratification, which ensures the stability of an oligarchic order. This nudges the political elite to adopt strategies in favor of the creation of monopolies and limiting free trade and markets. No wonder, that human societies lived in almost static societal order in various civilizations over thousands of years. These almost static societies, like the antique empires, nonetheless, were able to develop fantastic cultural achievements and had some piecemeal change and progress, albeit slow and controlled by political elites vying for stability.

But states do not exist in a vacuum. Economic dynamism, technological advantage and growing wealth created by a freer economy typically translates into military advantage. Because of geopolitical competition, no state can afford to remain frozen in stagnation if it has a militarily superior opponent because of its dynamic economy and technological advantage. Hence the dilemma of all political elites, especially since the 16th century, when the transition accelerated in England towards a freer market. Since then, the security dilemma is whether to allow freer markets and competition or opt for protection and limiting markets through creation of entrenched oligarchical order underpinned by monopolies.

The dilemma for political elites is how to balance the different aspects of the security needs of the political elite: marketization, which responds to the foreign policy challenges, or opting for the internal maintenance of monopolized situations, which ensure the stability of power and secure the incomes for the political elite at home, but opens the possibility of foreign domination and exploitation by a superior military power.

5. Menger's Janus-faced human actor and the two major methodological debates of the Austrian School

The uncertainty and entrepreneurial invention and innovation opens another frontier for reflection in relation to the Mengerian

heritage. In this section, I reflect on the second methodological debate ("*methodenstreit*") between economists belonging to the Austrian School and the mainstream school of economics.

The first *methodenstreit* was waged between Menger and economists belonging to the German Historical School. Menger argued that there are exact laws, which shape human economic behavior, and not only historical circumstances. The second methodological debate was/is about mathematization of economics, waged between later generations of Austrians and mainstream economists. The underlying issue in the second methodological debate was whether human economic behavior at national level can be planned by mathematical modelling on the basis of vast quantities of statistical data available to the state (Huerta de Soto 1998).

Menger rejected using mathematical models in theory construction in economics and refrained himself from using mathematical models. In a letter written to Walras, Menger argued that "We do not simply study quantitative relationships but also the nature [or essence] of economic phenomena. How can we attain to the knowledge of this latter (e.g., the nature of value, rent, profit, the division of labor, bimetallism, etc.) by mathematical methods?" (Hutchinson, p.17). Sreissler (1969) argued that the relative underdeveloped nature of Austrian capitalism and Menger's aversion to full equilibrium models are the main reasons for the dislike of Menger using mathematics. Jaffé (1976) opined that the method of process analyses with its emphasis on tracing the complex phenomena to the underlying atomic forces at work is foreign to mathematical modelling.

Despite Menger's aversions, the logic of *Principles of Economics* might suggest that mathematization is possible. Menger's starting point was that it is possible to discover causal connections, which exert an influence like exact laws. This so because according to Menger under certain conditions human beings with free will are compelled to act as if they were bereft of free will. Many of his practical examples clearly indicate that his economizing human actors are acting on the basis of pre-existing and stable preferences and their production plans are based on well-established patterns. The owner of cows who takes them to the market has clear preferences that his aim is to exchange his cows for horses, and vice versa for

the horse owner (ibid, pp.181-2). The wheat farmer also has clear and well-established preferences for how to use the wheat harvested (ibid, p.129). Based on these examples, one may deduce that if one does a thorough investigation regarding the sociological nature of preferences of economizing humans and their conditions, then it is fairly easy to come up with a mathematical model which predicts with a fairly good estimate the amount and price of wheat available in autumn and the price of horses on the market in a future date. Indeed, Menger even cites the importance of market research firms in reducing uncertainty in business by acquiring such data and providing an analysis of the nature and possible development of certain markets. Viewed from this angle, it is not at all surprising that George Stigler (1937, p.235) observed that Menger was one of the first economists "to introduce the indispensable economic tool of 'static' assumptions into economic analyses".

This is such a contradiction, that even Hayek (1934, p.15) felt the need to explain why Menger did not use mathematical formulas. Hayek argued that Menger was not familiar with the work of Cournot and von Thünen, who inspired Jevons, Walras, and Marshal, when he wrote his book, despite his unusual familiarity of economic literature. On the other hand, Hayek also noted that even though Menger later became familiar with the work of Jevons and Walras, he nevertheless refused to use mathematics, despite his strong interest in the natural sciences. Hayek closes his discussion on Menger's use of mathematics with a question: "Must we conclude that he felt rather skeptical about its usefulness?" To my mind Hayek is leaving this issue in ambiguity.

I posit that the underlying reason for Menger's turn away from mathematical modeling is the fact that his human actor is a Janus-faced human actor. Menger himself did not explicitly explore the Janus-faced character of his human actor. In this section I will reconstruct the Janus-faced human actor of Menger.

The reason that it is possible to build a Janus-faced human actor is that Menger emphasized different facets of human economic behavior in the two key distinct parts of the *Principles of Economics*. The first facet dominates Chapter I of his book, where he analyzes the theory of goods and the causes of the progress of civilization. The second facet is his description of economic behavior which is

found in Chapter III and following chapters, where Menger analyzes the theory of value, exchange and price. These two major blocks are based on two very different facets of human behavior: an inventive-innovative enterprising and an economizing-carefully husbanding. An "irrational" one and a "rational" one. The characterization of rational and irrational was not used by Menger himself. I borrowed these terms from Schumpeter (1934, 326-331) to characterize the two different faces of Menger's Janus-faced human. I find Schumpeter's characterization to be very apt. They resonate with my sense of what Menger leaves implicit. After all, Schumpeter was a student of the Mengerian tradition at the Vienna University taught by the immediate key followers of Menger, by Wieser and Böhm-Bawerk.

Economizing-carefully husbanding economic behavior is "rational" economizing. This is the facet which is employed by Menger in explaining human action in those chapters of the book, where he discusses laws governing exchange, and price formation. In this context, economizing for Menger means carefully husbanding the scarce goods already at the command of the acting person. Economizing means "(1) maintaining every unit of a good standing 2) to conserve its useful properties, 3) to make a choice between their more important needs, which they will satisfy with the available quantity of the good in question (4) to obtain the greatest possible result with a given quantity of the good or a given result with the smallest possible quantity" (ibid, pp.95-6). In these chapters of the book, the economizing human actor arrives at the market with already produced goods and stable value preferences and needs. One acting human arrives with cows and wants to trade them for horses, while the other arrives with horses and wants to trade them for cows. Both are rational actors: they are economizing with a given set of resources and want to achieve a better set of resource-allocation through trade in the context of scarcity. Thus, they bargain rationally to achieve the economically best resource allocation among them through trade. The result of their bargaining is within a range of rational calculation on both sides conditioned by supply and demand. Knowing the set of conditions, which shape their bargaining, their actions can be analyzed as actions of actors independent of free will, although they act with

their full capacity of will as far as they want exchange, and they want to ensure the fulfillment of their preferences. Nonetheless, the conditions are such, that they will arrive, following a rational calculation, at a result, which is the best possible outcome. Menger even notes that human caprice has some degree of influence, but it is equally certain that the opposing efforts of the bargainers to derive the greatest possible gain from the transaction will balance out in most cases, and that prices will therefore have a tendency to settle at the average of the extreme possible limits (ibid. pp.196-7). Thus, the economizing actor of Menger is the rational "homo economicus", who is carefully husbanding the available resources in order to ensure the best possible satisfaction of their needs.

The "irrational" discovery and widening of knowledge is the second facet of Janus-faced human behavior. This facet of human of behavior dominates the first chapter of the *Principles of Economics*, where Menger theorized about subjective valuation and the progress of civilization. In this chapter, Menger clearly outlines that the progress of civilization is due to the human ability to discover new, previously unknown causal connections between two phenomena, and thereby widen their knowledge and their ability to put their ideas to work and implement new discoveries. This, facet, as argued later Schumpeter, is "irrational". Invention and innovation are irrational in the sense that it is not about rational economizing of given (already acquired) goods based on customary or traditionally bounded preferences. In case of production, it does not follow a previously established set of rules of production. Thus, invention and innovation are "irrational" because it means a break with the given reality, from the repetitive circle of rational and prudent economizing. Invention or innovative ideas are meant to create a new reality. Invention and innovation are not based on rational calculation, because they are outbursts of a new idea, which breaks with the calculable reality. The innovative entrepreneur acts on the basis of estimation of possible gains, instead of rational calculation.[3] Huerta de Soto (2010, p.26) already used the term "estimation" to characterize entrepreneurial decision-making and wrote

[3] I am indebted to Brecht Arnaert, who clarified to me the difference between estimation and calculation.

that an entrepreneur estimates the future effect of his actions, when he decides what actions he will carry out. Schumpeter (1934, 226-231) opined that irrational innovation and rational calculation are not only opposites, but a continuum: "rational calculation" comes into play in the second phase of entrepreneurial action, in the phase of the implementation of an "irrational" innovative idea.

Discovery, widening knowledge, invention, and entrepreneurial innovation, as I discussed in the previous section, causes an incalculable insecurity as far as the future is concerned. Invention and innovation disturb the rational economizing plans of all other economic actors in the same market niche because their planning was conceived within the context of the already given and accepted, by pre-innovation reality, by traditions, customs, and well-oiled practice. As Huerta de Soto (2010, p. 22) forcefully argued: "Future is always uncertain, in the sense that it has yet to be built … the future is open to all of man's creative possibilities, and thus each actor faces it with permanent uncertainty".

Thus, the Mengerian Janus-faced human is a hybrid of "rational" calculation with given conditions and established preferences and an "irrational" inventor and innovator, who creates a new world by discovering new connections, breaking with established customs, preferences and practices.

The Janus-faced nature of humans, nevertheless, remained a subdued and implicit theme in Menger's book. The reason for this is that Menger's manifest aim was to set up a theoretical system that shows that, and how the economy is guided by exact laws. Consequently, he relied more on the "rationally" calculating and economizing homo economicus facet of human economic behavior, that follows customs, established practices and preferences. Nonetheless, he was aware of the fact that humans have more than one facet in their economic acting. But this creative and entrepreneurial facet only had a rather subdued presence in the book, because, according to my view, his development theory on the cause of progress of civilization is subdued in the book compared to demonstrating the existence of predictable exact laws. But it is there. Ironically, the modern Austrian School is focused on the entrepreneurial creative facet of the Mengerian human actor, while the modern mainstream Walrasian economic schools rather focus on the homo-economicus facet.

The Janus-faced human actor is the key obstacle to central planning based on mathematical modelling.

A central planner has to rely on known preferences and production data before a quantified plan or mathematical model can be usefully built and employed. However, the biggest challenge to any mathematical model and plan based on pre-existing preferences and production data is the unexpected burst of new ideas based on "irrational" invention and entrepreneurial innovation, which disturbs the reality of the past measured by data available to modelling.

The Janus-faced actor poseses a different objection to mathematical modeling in economics from that of Hayek. Hayek (1945) argued that mathematical modeling and central planners are never ever able to collect all relevant information due to the nature of decentralized, tacit, and dispersed knowledge of local actors. Contrary to Hayek, the essential element of the critique based on the Janus-faced actor is that mathematical modeling is unable to estimate the impact of future discoveries and the creative power of human imagination. This is so because any model and plan based on rational calculation based on the continuity of a pre-existing equilibrium is unable to tackle the dynamism of the market due to entrepreneurial inventions and innovations. As Huerta de Soto (2010, p. 276) theorized, a dynamic market cannot be easily reconciled with planning based on mathematical modeling.

Conclusion

My original aim was to describe Menger's theorizing on uncertainty and to describe the nature of Menger's contribution to the importance of uncertainty in economics. I felt that it was a missing theme in the literature.

As I have proceeded, I have gone well beyond simple stock-taking of what Menger wrote explicitly on uncertainty and its relationship to human economic action. This is partly because of the introductory nature and the relative brevity of Menger's principal book. Also, the *Principles of Economics* was devoted to demonstrating that economic action is subject to laws and cause and effect

relationships that shape human action in the field of economics and the actual working of these laws. For this reason, Menger's discussion of uncertainty is scattered: it pops up here and there, when and where Menger felt the need to show the impact of uncertainty.

Thus, I am not mearly providing an overview of what Menger's explicit statements were about uncertainty. I have attempted to provide a reconstruction of the role of uncertainty in the Mengerian theoretical system based on the underlying and sometimes embryonic thoughts of Menger. This reconstruction also built on the later works of students of the Mengerian schools, especially on the work of Friedrich von Wieser, Joseph von Schumpeter, Ludwig von Mises and Jesus Huerta de Soto, so that with the help of their ideas I can expand and enrich Menger's embryonic ideas. These later students, based on the vision and theoretical framework created by Menger, expanded and fully developed arguments, whose origin can be found in Menger' work.

The most important argument of the paper is that Menger in fact designated the place of uncertainty as a key condition shaping human economic activities, alongside scarcity.

As posited by Menger, people do make an effort to reduce or eliminate uncertainty through learning, perfecting knowledge or new discoveries and innovations. But the extension of knowledge, and the consequent division of labor and increasing complexity create new uncertainties. This is the paradox of uncertainty. For this reason, uncertainty is an ever-present and pervasive condition of human economic actions.

Probably the most important contribution of the paper is my clarification that Menger broke with earlier economic thinking and did not employ uncertainty to explain and justify profit. The paper thoroughly reconstructs Menger's theory of profit and argues, based on Menger's embryonic ideas, that unusually high profit is connected to the monopoly position achieved by an entrepreneur. Monopoly can be achieved by two principal ways. In a competitive market, the unusually high profit is a temporary premium for inventive and innovative entrepreneurship. The second principal way is that state regulation can establish a permanent or regulative monopoly. In this case, the source of the

profit is the exploitation of consumers, which is enabled by protective regulation.

Although Menger rejected the explanation of uncertainty as cause or justification for profit, the paper brings back the phenomenon of uncertainty as a key variable to understand the wider socio-political implications of these two types of monopolies.

Going beyond the boundaries of Mengerian pure economic analyses, I argue that competitive free markets provide the best possible institutional arrangements for dynamic economic growth, but at the same time free market generates uncertainty. Uncertainty encourages economic and political actors to vie for protective measures by the state. I argue that for this reason, there is a constant socio-political struggle in our societies between those who prefer wealth generating pro-market policies and those who prefer more protective policies and state interventionism to ensure their security and stability.

Economic life and economic action are embedded in the wider societal, political and cultural world of human societies. The negative aspect of uncertainty is one of the key arguments to invoke central planning, governmental interventionism, and community regulation. These measures aim to reduce or eliminate uncertainty caused by the "chaos" of decentralized complex and interwoven markets. In these discussions, the emphasis is on the destructive side of Schumpeter's "creative destruction" metaphor. Nonetheless, those who invoke increased state role, are typically avoiding discussing the uncertainty that the almighty state poseses by such measures as wars, persecutions and other actions that directly threaten the life and the well-being of people.

Finally, the paper reconstructs Menger's Janus-faced human actor based on the two different characterizations of human economic action in different chapters in the *Principles of Economics*. One facet of human economic action is "rational": the calculating, economizing human who follows customs and established practices and traditions. The other facet is "irrational": the inventor and innovator who creates a new world based on estimations and expectations.

Menger's Janus-faced human allows a new understanding of the methodological debates of the Austrian School of Economics. So, I argue that the Mengerian exact laws and rational economic man

would in fact call for mathematization in economics. Yet, the other facet of the Mengerian human, the inventive and innovative, rule breaking, and new-world-creating entrepreneurial human actor negates the effort to mathematical modeling and economic planning.

Even though uncertainty is an ever-present and ever-threatening underlying factor in economic life, Menger was optimistic that the human ability to think and solve problems ensures the progress of civilization and better and better provisions of goods to better and better satisfy human needs and wants. From a Mengerian viewpoint the metaphor of "creative destruction" is a misleading one, despite its enormous power to explain a concept in a simplified manner. It is misleading, because it suggests that creative progress and the destruction in its wake are equal forces. The Mengerian position is that the creative progress of civilization means an ever more complex and ample provision of goods. As by Mises (1949, pp.292-3) argued, the total sum of profit is bigger than that of losses and consequently the plenitude of goods and wealth are increasing.

Menger's argument is that creativity trumps destruction and human ingenuity copes with uncertainties. The key condition is free market for achieving the "wealth of nations", better and better provision of our needs with goods, as far as we think that goods are important for the satisfaction of our needs.

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