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# History of Economic Thought

## VI. The Historical School and The Marginal Revolution

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# VI. The Historical School and the Marginal Revolution

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1. The Historical School
2. German and British Subjective Utility Theorists
3. The Marginal Revolution
4. William Stanley Jevons
5. Léon Walras
6. Carl Menger



# 1. The German Historical School

## Wilhelm Roscher (1817-94) and the older historical school

- Karl Rodbertus (1805-75)
- Karl Knies (1821-98)

## Gustav von Schmoller (1838-1917) and the younger historical school

- Adolf Wagner (1835-1917)
- Georg Friedrich Knapp (1842-1926)
- Werner Sombart (1863-1941)

“The intellectual bodyguard of the house of Hohenzollern”

“Verein für Socialpolitik” and “Kathedersozialismus”



## Jean Charles Léonard Simonde de Sismondi (1773-1842)

- *Nouveaux principes d'économie politique* in 1819 provoked first debates over Say's law
- Sismondi former Smithian, became an underconsumptionist due to post-war depression
- Abandoned the belief in general economic laws and *laissez faire*
  - Argued for welfare state and intervention
  - The market did not reach equilibrium by itself (overproduction *and* underconsumption)

## Georg Friedrich List (1789-1846)

- Main work: *National System of Political Economy*
- There is no necessary harmony of individual interests and national interest
- Therefore statesmen need to intervene, regulate the economy for the common good
- The infant industry argument for protectionism invented by List
- Theory of stages of development: 1. pastoral, 2. agriculture, 3. agriculture and manufacture, and 4. agriculture, manufacture and commerce



## Georg Friedrich Wilhelm Roscher (1817-94)

- Since 1848 professor in Leipzig, the founder of the historical school
- *Grundriss zu Vorlesungen über die Staatswirtschaft nach geschichtlicher Methode* (1843)
- Roscher focuses on the concrete historical development of economic phenomena rather than the abstract theorizing of classical economics

## Basic approach: economics contingent, specific to time and place

- Universal theories not possible – at best, generalizations applicable to certain societies and periods
- Historical investigation therefore the main method of economics
- Parallel to other sciences: evolution much central issue across academia
- Some sympathy for economic liberalism, but increasing focus on “the social question” – the (alleged) problems of a growing working class



## **Karl Rodbertus (1805-75)**

- Avowed socialist: but socialism only a gradual evolution
- Modified Ricardianism: rent and interest the result of exploitation
- Income shares historically contingent, not down to universal laws

## ***Verein für Socialpolitik***

- founded in 1872, to deal with the “social question”
- Advocated piecemeal social legislation and welfare interventions
- Derided as “Kathedersozialisten” by their opponents
- Became the key venue for debate in German economics
- *Kongress deutscher Volkswirte* met last time 1885



# The Historical School on Money

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- **Karl Knies (1821-98), Professor at Heidelberg**
- Key works: *Die Politische Ökonomie vom Standpunkt geschichtlichen Methode* (1853), *Geld und Credit* (1873-76)
- We cannot include money under the general categories of producer goods and consumer goods
- A third category is needed, media of exchange. The laws of value governing each different

## **Georg Friedrich Knapp (1842-1926), Professor at Leipzig and Strasburg**

- Most important book: *The State Theory of Money* 1905
- Founded the chartalist tradition: money is created by convention or legislation, not in the market
- The value of money derives from its legal status



## **Gustav von Schmoller (1838-1917), the leader**

- Professor at Halle, Strasburg and Berlin
- The younger school was more “extreme” than the older school

## **Methodology**

- No room for the deductive approach of the classical school
- All economics from empirical investigation, historical research
- *Methodenstreit* with the Austrians

## **Policy Conclusions**

- Government intervention the great solution to all social and economic problems
- A turn against classical conclusion: e.g., on the question of privileged labour unions

## **Institutional Power**

- The historical school reigned supreme: Schmoller controlled all university appointments

## **Werner Sombart (1863-1941), the apogee and end of the school**

- Some interesting sociological and historical sketches (*Moderne Kapitalismus, Der Bourgeois*)
- Late in life expressly socialist: *Deutscher Sozialismus* 1934





## English Historical School

- Thorold Rogers (1823-90)
- Walter Bagehot (1826-77)
- Arnold Toynbee (1852-83)

## American Institutionalism

- Thorstein Veblen (1857-1929)
- Richard T. Ely (1854-1943)
- Frank W. Taussig (1859-1940)

## In France

- The historical school almost completely replaced the native liberal school
- Rise of academic economics in France went hand-in-hand with positivism
- Lack of formal credentials of the French *laissez-faire* school



## 2. German and British Subjective Utility Theorists

### Strong German Tradition, eventually overshadowed

- From foundation of classical economics in Germany
- Focus on definition and analysis of the economic good
- Mainstream in Germany until c. 1860 or so, influence on Menger

### Subjective Undercurrent of Classical Economics

- Centered on Oxford, Dublin
- Focus on value theory, money, social harmony



## Gottlieb Hufeland (1760-1817)

- *Neue Grundlegung der Staatswirthschaftskunst...* (1807)
- Subjective definition of goods: only through relationship to people's ideas do things become goods

“The concepts of good and value are mutually dependent and only exist through their relationship to means and ends.”

## Heinrich von Storch (1766-1835)

- German economist in St. Petersburg
- Also argued for subjective value theory
- A want is a desire for a thing that spares us uneasiness or gives us pleasure



## **Karl-Heinrich Rau (1792-1870)**

- Professor in Heidelberg, *Grundsätze der Volkswirtschaftslehre* 1826
- There are species and subspecies of goods
  - E.g., cereal grains and wheat, barley...
  - Groundwork for substitutes and complements
- Organic instead of mechanic metaphors

## **Friedrich Benedikt Wilhelm Hermann (1795-1868)**

- Professor in Munich, *Staatwirthschaftliche Untersuchungen...* 1832
- “Whatever satisfies some or other human need is called a good”
- Material goods, intangible goods, services and relationships included under concept of good



## **Peter Mischler (1821-64)**

- Taught in Prague, *Grundsätze der Nationalökonomie* 1857
- Three classes of goods: producer goods, acquisition goods, consumer goods

## **Lorenz von Stein (1815-90)**

- Professor in Vienna, *Lehrbuch der Volkswirtschaft* 1852
- Process-oriented: only active relationship with human ends make a thing a good
- Production shifts natural elements into the realm of goods
- Consumption converts goods back into natural realm

## **Albert Schäffle (1831-1903)**

- Professor in Vienna, *Die Nationalökonomie* 1861
- Focused on active human subjects, on activity of want-satisfaction
- “Value is the significance a good possesses by dint of its usefulness to the economic individual’s consciousness of economic purpose”



## Key figure: Rev. Richard Whately (1787-1863)

- Centre of liberal Oriel circle at Oxford (“Oriel Noetics”)
- Rationalist, revived classical logic with 1826 *Elements of Logic*
- Recommended Nassau W. Senior to Drummond chair at Oxford 1825-30, then succeeded to it 1830-31
- Anglican archbishop of Dublin from 1832, funded chair in political economy at Trinity College, Dublin

## Fundamental Position: Economics is not materialistic and anti-Christian

- Opposed attempt by Radicals (often atheists) to monopolize economics
- Their system anti-Christian, implied inherent class conflict
- The economy is a harmonious social order, testifying to divine wisdom
- *Laissez-faire* economy and divine order integrated



# Richard Whately and Catallactics

## Economics is Catallactics

- Rejected definition of economics as the study of wealth
- Economics is the study of exchanges – catallactics
- Man is the animal that makes exchanges, the focus is on the *acts of exchange*, not on the *things being exchanged*

## Value and Distribution

- Any exchange depends on differences in subjective evaluation
- Generalized theory of distribution and factor pricing
  - Wages, rent and interest are really payments of the same kind
  - Down to productivity
- *Introductory Lectures on Political Economy* (1831, 2<sup>nd</sup> ed. 1832)





## Nassau W. Senior (1790-1864)

- First holder of the Drummond chair at Oxford
- Developed economics as a deductive science from basic principles
- Explicit follower of Say: value depends on utility and scarcity
- Abstinence theory of interest

## William Forster Lloyd (1794-1852)

- Drummond chair 1832-37
- *Two Lectures on the Checks to Population* (1833)
  - First developed the idea of the tragedy of the commons
- Clear statement of the law of diminishing marginal utility





## Lloyd on Marginal Utility (1837)

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Let us suppose the case of a hungry man having one ounce, and only one ounce of food at his command. To him this ounce is obviously of very great importance. Suppose him now to have two ounces. These are still of great importance; but the importance of the second is not equal to that of the single ounce. In other words he would not suffer so much from parting with one of his two ounces ... as he would suffer, when he had only one ounce, by parting with that one, and retaining none. The importance of a third ounce is still less than that of the second; so likewise of a fourth, until at length, in the continual increase of the number of ounces, we come to a point when ... the appetite is entirely ... lost; with respect to a single ounce, it is a matter of indifference whether it is parted with or retained. Thus, while he is scantily supplied with food, he holds a given portion of it in great esteem, in other words, he sets a great value on it; when his supply is increased, his esteem for a given quantity is lessened, or, in other words, he sets a less value on it.



# Samuel Mountifort Longfield and John Elliot Cairnes

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## Samuel Mountifort Longfield (1802-84)

- First holder of the Whately chair at Trinity College, Dublin, *Lectures on Political Economy* 1834
- Marginal analysis of demand: consumer demand is a schedule related to prices
  - Individually falling demand schedules are the basis for aggregate market demand
  - Marginal utility therefore key to price formation
- Relevant supply for price formation is the stock of the good in existence
- Currency school economist, important but neglected critiques of banking school

## John Elliott Cairnes (1823-75)

- Studied at Trinity College, Dublin, appointed to Whately chair 1856
- *Character and Logical Method of Political Economy* 1857 influenced by JS Mill
  - Political economy is the science of wealth
  - Ricardian rent theory
- Influential writings on the gold discoveries of 1850s and 60s and their consequences
- *Slave Power* 1862 an excellent treatment of the economic problem of slavery



### 3. The Marginal Revolution

- Problems
- Differences
- Sociology
- Precursors



## The Situation Before the “Revolution”

- Problems in explaining actual prices in classical terms
  - Labour theory of value
- Problems in exactly showing the interrelations of social and economic phenomena
  - Class conflict or social harmony
- The British and German subjective utility theorists had made important advances
- Classical economics reigned supreme (JS Mill)



## Walras and Jevons

- The quest for mathematical economics
  - Walras describing general equilibrium mathematically
  - Jevons making utility tractable through differential calculus
- Jevons and Walras closer to the British utilitarian tradition
- Positivist attitude to science

## Menger and the Austrians

- Economics can only establish qualitative laws
- Closer to the German and general continental tradition
- Classic / Aristotelian understanding of science



## Economics as Profession

- In general, the period saw the “professionalisation” of economics – everyone treated here university professors (eventually)
- Economics becomes an academic discipline – the gifted amateur and the man of affairs no longer make theoretical contributions

## A few Precursors Passed Over in Silence

- Mathematical economists Daniel Bernoulli, Auguste Cournot, Jules Dupuit
- German economists Hermann Heinrich Gossen and Johann Heinrich von Thünen
- Of varying importance – will be passed over in silence



## 4. William Stanley Jevons (1835-82)

### The Man

- From Unitarian background, went to University College, London 1850, studied chemistry, mathematics
- Assayer at the Australian mint in Sydney 1854-59. Decided there to make the “study of man” his vocation
- Returned to University College, London 1860, graduated 1862

### His Works

- Published work on value of gold 1863, became famous with his *Coal Question* 1865
- Professor of logic, moral and mental philosophy at Owens College, Manchester 1866, professor of political economy at University College, London, 1876, resigned 1880 to devote all his time to research
- Key writings: *Theory of Political Economy* 1871, *Principles of Science* 1874, *Money and the Mechanism of Exchange* 1875



# The Jevonian Revolution



## Subjectivism

- Value is subjective
- Methodological individualism
- Benthamite utilitarianism re-interpreted and applied

## Search for Scientific Rigour

- Application of mathematics to economics
- Economics is like natural science: there are necessary quantitative laws
- Numbers can express everything

## Method/Procedure

- Invent hypotheses, compare deductions from these to experience
- Jevons did not aim at an “axiomatic” economics – what mattered was the realism of a theory, not its logical construction





## Building on Bentham

- Jevons founded his theory on utilitarian ideas
- Use value or utility one-dimensional and quantitative
- Felicific calculus reduced to two factors: intensity and duration
- The quantity of pleasure determined by their product
- Time and intensity continuous variables, hence so is utility

## Application

- Utility is always a relationship between a person and an object
- An object can have different utility to different persons
- What matters is the *increment in utility* when the quantity of the object increases – the *final degree of utility*
- Each individual signals this magnitude to him by his readiness to pay for a given commodity
- We can compare different persons' evaluation of the same object
- But we cannot construct a social felicific calculus (or social utility function), since people may attribute different degrees of utility to the same amount of money



## Opposition to Classical Economics (and Benthamism)

- Jevons wanted to reduce economics to the theory of rational choice
- Economics only concerned with “needs of the lowest order”
- Each person assumed perfectly rational when calculating his utility function
- But it is impossible to make interpersonal comparisons of utility, so there is no consequentialist ethics

## Utility and Prices

- The exchange value of a good is equal to its marginal utility
- And to the marginal disutility of labour necessary to obtain it
- The quantity of a good produced and consumed is determined simultaneously with its exchange value
  - Notion of indifference a necessary implication



## Capital

- Is “the aggregate of those commodities which are required for sustaining labourers of any kind or class engaged in work” and “simply allows us to expend labour in advance”
- Distinction between amount of capital invested, and the amount of investment of capital
  - Former simply quantity of capital
  - Latter has two dimensions, quantity of capital and duration
  - “Average time of investment of the whole amount” the ratio between first and second
  - Foreshadows Böhm-Bawerk’s average period of production, lot of ink spilled here
  - Jevons is the first to give graphical presentation of capital structure in the form of a triangle – foreshadows Hayek

## Rent

- Jevons follows Ricardo on rent, natural resources – nothing new here
- Jevons soon overshadowed by Alfred Marshall – “all the good in Jevons is incorporated in Marshall” so there’s no need to read him (allegedly)



## “Jevons’s Only Disciple”

- Unitarian minister, classical scholar
- Wicksteed was initially a Georgist before encountering Jevons

## Subjective Value Theory

- Wicksteed took the theory to its natural conclusion, applied it to all fields of human activity
- Subjective value connected to opportunity cost
  - The cost of production is simply “the marginal significance of something else”
  - The supply curve for any commodity is simply the reverse demand curve for the set of all other commodities (shades of Say’s Law)

## *An Essay on the Co-Ordination of the Laws of Distribution (1894)*

- One of the first works illustrating marginalist theory of wages, profits and rents
- Income distribution is not arbitrary or simply down to class conflict
- Income is based on the marginal productivity of the factors of production



## 5. Marie Esprit Léon Walras (1834-1910)

### The Man

- Trained at the *Ecole des mines*, failed entrance exam at the *Ecole polytechnique*
- Gave up engineering for journalism, worked at the *Journal des économistes*, as clerk at the railways, as bank director
- Gained teaching position at the Academy (later university) of Lausanne 1870, nominated to chair of political economy next year, retired 1892

### His Works

- *Elements d'économie pure* 1874, fourth edition 1900, “definitive” French edition 1926. First of three planned volumes

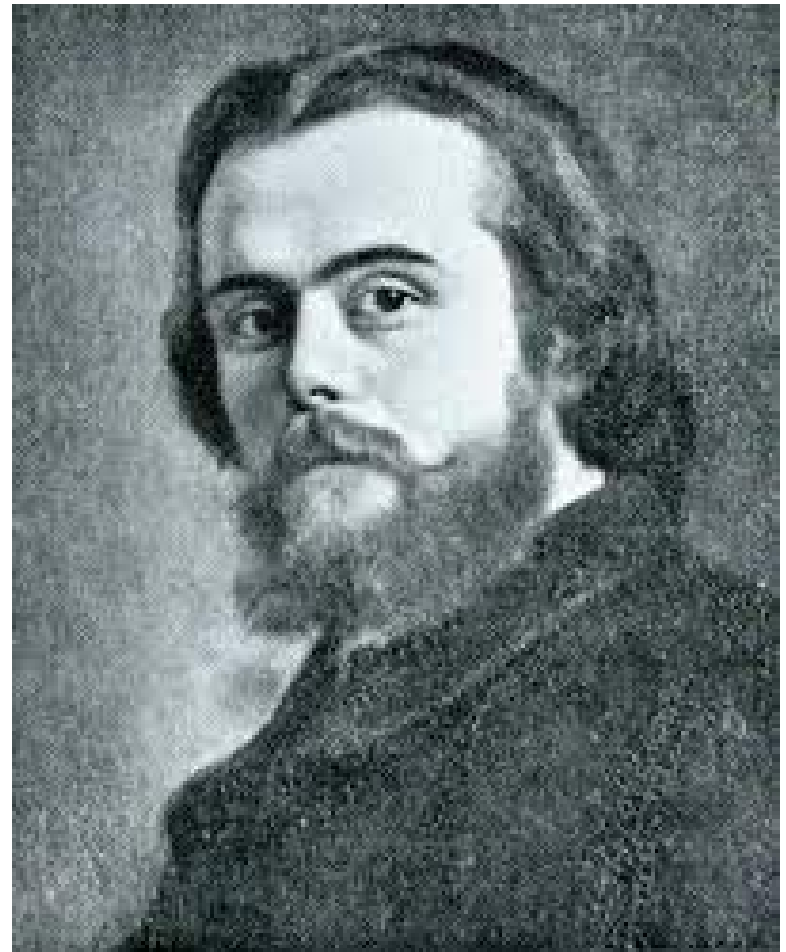


## Key Inspirations

- French mathematical economics
- Developments in mechanics, physics

## Walras the Elder

- Walras's father Antoine (1801-66) an important economist
- Concept of *numéraire*
- Distinction between capital goods and their services
- Capitalists and entrepreneurs





## The Plan of Work

- Volumes dealing with A) pure economics; B) applied economics; C) social economics
  - A) Deals with the laws of exchange, similar to the natural laws of physics, but dealing with facts of humanity, not natural facts
  - B) The subject here is the production of wealth, the division of labour, industrial organisation
  - C) Social economics deal with problems of distribution, including ethical issues

## The Vision Behind

- (A) closely connected to natural sciences and their method, (B) to social sciences, and (C) to philosophy
- The core of economics thus deal with exact, quantitative laws
  - Applied and social issues are less certain
  - The method of (A) applied to (B) and (C)



## The Freely Competitive Market

- An analytical assumption and an ethical ideal
- Paris Bourse of his day the archetype: the auctioneer calls out a price, adjust the call as demand is higher or lower than supply
  - Exchanges only take place once equilibrium reached
- Basis for Walras's *tâtonnement* process: initial price set at random (*crié au hasard*), then adjusted in process of trial and error

## Pure Exchange Economy

- The data of the problem consist of
  - The number of commodities and economic agents
  - Their preferences and the endowments of each commodity for each agent
- Preferences are expressed by individual demand function for different goods
  - Derived from utility functions
  - Utility is a measurable quantity





## Equilibrium Definition

- The solution to a system of equations, illustrated by the *tâtonnement* process
- In pure exchange, there are for each individual as many demand functions as there are commodities
  - Each function express demand as a function of the price of the commodity (expressed in the *numéraire* commodity), all other prices, and the initial endowments
- Demand functions for each commodity added up to give aggregate demand functions
- Individual budget constraints are reflected in a system of equations expressing aggregate equilibrium conditions (supply = demand)

## Resulting Equations

- Two groups of equations: demand functions and conditions of equilibrium
- The number of equations in each group equal to number of commodities
  - If  $n$  commodities, then  $2n-1$  equations
- Number of equations equal to number of unknowns:  $n-1$  relative prices in terms of numeraire commodity,  $n$  number of commodities
- Once prices are determined, the quantities bought and sold follow from demand functions
- Result: the prices of the various commodities proportional to their *raretés*, their marginal utility



## Further Assumptions

- To examine production, we now assume that each individual has an endowment of capital goods
  - Land, capital goods in the real sense (machines etc.) and personal capital goods (skills)
- Production functions are known
- Constant returns to scale
- Capital goods owners hire out services to entrepreneurs, latter organise production and sell products
  - Profits limited by competition to wages of direction

## New Sets of Equations

- Production functions ensure equality between costs of production and value of each consumption good
- New group of demand functions: for services of capital goods, equal to their number
- New group of equations expressing equilibrium conditions for capital goods markets
- The new equations correspond to number of additional unknowns
  - Prices of capital goods service in terms of numeraire
  - Quantities demanded of each service
  - Quantities produced of different consumption goods
- *Tâtonnement* process much more complex in capital markets



## Credit

- Treated of in “real terms”, i.e., in terms of the commodity chosen as numeraire
- New commodity introduced to model accumulation:  $E$  (for *épargne*), yields one unit of numeraire commodity per year in perpetuity
  - Price of  $E$  thus equal to inverse of interest rate
  - Demand for  $E$ : from entrepreneurs wanting to invest in new capital goods
  - Supply of  $E$ : from savers (capitalists)

## Accumulation and Capital Markets

- Demand and supply of  $E$  therefore depends on preference for present consumption over future and on the return on investment of new capital goods
- One new equation, since one new unknown in form of price of  $E$
- It is possible to define, for each capital good, a rate of return given by its net income divided by its price
  - Investment in different capital goods must yield rates of return equal to the interest rate equating demand and supply of  $E$
  - In equilibrium, demand=supply for each capital good
  - If some good yields a higher rate of return, expansion of its production results, and conversely for a good with a lower rate of return



- In the final stage of analysis, Walras introduces money
- Money is a bridge by which economic agents can cross time intervals between outlays and takings
- Strict contradiction emerges:
  - Walras's insistence on static nature of equilibrium and full certainty
  - Notion of money as something more than the *numéraire*
  - Not clear what role of money is in Walras's theory
- Net demand for money depends on the rate of interest, this is the opportunity cost of money
- Overall problem for Walras and his followers: demonstrating the existence, uniqueness and stability of an overall equilibrium



## 6. Carl Menger (1840-1921)

### The Man

- Born in Neu-Sandec, Galicia to family of prosperous craftsmen, officials, army officers
- Studied in Vienna (1859-60) and Prague (1860-63), took doctor's degree in Krakow
- Worked as journalist in Lemberg and Vienna
- Reporting on the state of the markets for the *Wiener Zeitung* made Menger aware of the glaring contrast between traditional theories of value and what businessmen thought and did

### His Works

- Wrote the *Principles of Economics* (1871) in “state of morbid excitement”
- Professor at Vienna – Privatdozent 1872, extraordinary professor 1873
- Tutor to Crown Prince Rudolph 1876-78, called to new chair of political economy by the emperor 1879, retired 1903



## Menger's Works

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- *Principles of Economics* 1871
- *Investigations into the Method of the Social Sciences* 1883
- Other smaller works criticizing the historical school
- An important essay on capital theory
- Smaller works on money: e.g., the 1892 article on the origins of money



## Price Theory

- A uniform theory of price built from first principles
- Everything deduced from first principles
- Uniform causal explanation: individual human wants

## Influence

- The German historical school
  - Roscher: Economics studies laws of development
- The German subjective utility theorists
  - Theory of goods, connection to individual human wants
  - Focus on human action, activity of want-satisfaction



## The Nature of Economics

- Clear, qualitative laws – not quantitative
  - “All things are subject to the law of cause and effect”
- Mathematics not applicable as a method
- Letter to Walras 1883: the Austrian school fundamentally different, mathematics is *in principle* not a method for advancing economics

## Economic Method

- Research into economic phenomena has to proceed deductively from first causes
- The “analytic-compositive method”
- Methodological individualism
- Thoroughgoing subjectivism





## Explaining Exchanges

- The inequality of subjective valuations the foundation for exchange
- A person always prefers what he gets to what he gives up
- Reverse valuations lead to exchange

## Nature of Value and Goods

- Value cannot be measured: a thing has value if a person thinks it helps him achieve an end
- Valuable things are goods
- An object is only an *economic* good if its supply is limited, i.e., if there is not enough of it to fulfil all human wants
- Goods are valued according to the end the last unit serves



## Example of Water

- First litre used for drinking, second for cleaning, third for plants, then animals, then fountain
- Since units are interchangeable, its only the last satisfied want, lowest on the value scale that determines the value to the person

## Marginal Utility and Exchange

- A person will only acquire one more unit of any good, if the end he can then fulfil is ranked above what he gives up
- Similarly, the value of the unit he gives up in exchange determined by the lowest-ranked end
- There is always inequality, always preferring and setting aside
- Opportunity costs are baked in from the beginning



## Consumer Goods

- Consumer goods are valued for their immediate contribution to wants satisfaction
- They are immediate means to the ends humans pursue
- What Menger terms first-order goods
- The value of consumer goods are determined directly by subjective utility

## Producer Goods

- Producer goods are goods used to produce consumer goods
- Their value derive from the value of the consumer goods they ultimately contribute to producing
  - Second-order goods valued for their ability to produce first-order
  - Third-order goods are valued for their ability to produce second-order
- Producer goods are ordered in a structure or hierarchy



## Marginal Valuations

- The price of a thing is set between the valuations of the seller and the buyer
- Menger's example
  - Person A values 40 units of wine up to 100 units of grain
  - Person B values 40 units of wine up to 80 units of grain
- The exchange will take place at a price between 81 and 99 units of grain
  - Indeterminate beyond that, set by bargaining

## Marginal Pairs Analysis

- Extending the market narrows the zone of indeterminacy, but it does not eliminate it
  - The full analysis worked out by Böhm-Bawerk 1889
  - Note: the paradox of value is a non-issue to Menger and the marginalists
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## Organic Institutions

- In his polemics against the historicists, Menger worked out a theory of organic institutions
- Institutions developed over time as the “by-product” of purposeful human action
- Money the prime example of such an institution

## The Development of Money

- Money emerged to overcome the problems of direct exchange
  - Coincidence of wants
  - Divisibility of goods
- Under these conditions, exchanges very costly
- Individual self-interest lead people to seek indirect ways to achieve their ends
- They exchange what they have for goods they think can more easily be sold
- As indirect exchange develop, the precious metals were selected as most suitable
  - Due to their qualities: divisible, durable, valuable, etc.



## Marketability

- How easily a good can be sold for other goods
- Differences in marketability the precondition for indirect exchange to emerge

## Functions of Money

- Money is simply and only the general medium of exchange
- Other functions are derivative
  - Unit of account
  - Store of value
  - Standard of deferred payments



## Menger on the development of money

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As *each* economizing individual becomes increasingly more aware of his economic interest, he is led by this *interest, without any agreement, without legislative compulsion, and even without regard to the public interest*, to give his commodities in exchange for other, more saleable, commodities, even if he does not need them for any immediate consumption purpose.



## Menger's Capital Concept

- Critical of “real” capital concepts, as used in German and classical economics
- Capital means simply what merchants mean by it
  - The money equivalent of the goods devoted to production
- For this reason very critical of Böhm-Bawerk's later theory

## Entrepreneurs and Capital

- Entrepreneurs employ capital to produce goods
- They buy/hire services of higher-order goods
- Combine them to produce lower-order goods
- Then sell product to new set of entrepreneurs/to the consumers
- Capital goods do not earn interest, they are paid prices for their services
- But interest theory not really developed – the one lacuna in Menger's theory





## Distribution Theory Turned Around

- Distribution now clearly and closely tied to production
- Marginal productivity, contribution to the product, determines the prices of all factors of production
- In principle, all factors earn same kind of income – no essential differences between e.g., land and labour income

## Unsettled Questions

- What about interest, return on capital?
- What about the production and reproduction of capital goods, and the difference between gross and net profits?
- The principles of distribution still took some working out – there are *some* differences between land and labour we need to take into account, after all



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