**How Do We Think: Proof and Evidence**

**An Inquiry into the Ways of Reasoning**

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**This is a revised and broadly extended version of the book published by the Karolinum Press, Prague, 2006. ISBN 80-246-1179-1**

The hand-typed manuscript of this book was last revised by the author in 1967

Vladimír Benáček, the editor, expresses profound thanks to the publisher, The Karolinum Press, that they granted consent to disseminate this revised and broadly extended text of their book published in 2008 by placing it on the editor´s website for free public downloading.

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*Remark 1: Chapters I + II + III and XX through XXIV were not part of the book published in 2006. They were recovered from the inheritance archived in Vancouver, Canada, after 2007 as a new updated version, hand-revised by the author.*

*Remark 2: The new chapters and revisions of the already published text will be uploaded onto the website in several stages during 2024-25. All text will be in the WORD.DOCX format so that any reader can place comments or proposed revisions into the text and forward the document to the editor’s e-mail* [*vladimir.benacek@cantab.net*](mailto:vladimir.benacek@cantab.net) *in a Wikipedia style. All mail will be appreciated.*

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**Curriculum Vitae of Josef Macek**

*Thanks are due to the Library of the Prague School of Economics for the information collected in their Medailónek Josefa Macka at* [*http://socialnirevue.cz/item/josef-macek*](http://socialnirevue.cz/item/josef-macek) *that contributed substantially to this CV.*

1887 – Josef Macek was born on 13. 9. in Krumpach/Zábřeh in Moravia

1898 – after 5 years at comprehensive school he entered the Czech secondary school (Gymnasium) at Zábřeh. Due to a large German population in the area, Macek was bi-lingual, plus verse in Latin, Greek, and French

1906 – the GCE with honors and enrolment at the Faculty of Law at the Czech part of Charles University/ in Prague

1907 – first articles published in daily newspapers and reviews

1910 – his seminar paper (J. Gruber instructor) „On the trade credit” (published in 1912 in Obzor národohospodářský)

1911 – graduation at the Faculty of Law, Charles University, Prague

1911 – assistant advocate and enrolment at the German part of Charles University, where he studied philosophy and English for four semesters

1912 – until 1918, teaching at the Czechoslovak Commercial Academy, where he acquainted with E. Beneš (at that time the professor of sociology and national economy)

1913 – The Ministry of Culture in Vienna granted him a stipend for the study of philosophy at the University of Berlin in the winter semester

1915 – married to Běla Křížková

1915 – publication of ´Moral Sentiments of Adam Smith´ (Macek’s first book)

1916 – the birth of his first son George (Jiří) Lincoln

1917 – joined the Social Democratic Party and participated in Modráček’s Discussion Club

1918 – head of the Department of Land Reform at the Ministry of Agriculture

1919 – member of the Czechoslovak Peace Delegation in Paris (January – March)

1919 – moved to the newly founded State Bureau of Land as the Chairman of the Presidium

1919 – left the Social Democracy and established Socialist Party of Labor Class (jointly with F. Modráček); elected to the Prague Municipal Council (until 1923)

– assistant professor at College of Commerce lecturing on the theories of national economy and later in social policies

1920 – empowered to oversee the Land Reform (until 1921)

1921 – taking part in an Economic Seminar in Britain where he got acquainted with Keynes

– adjunct professor of economics

1922 – member of the Council of Advisors to the Government in economic issues

1923 – leading editor of prestigious monthly „Naše doba”

1924 – joined again the Social Democratic Party

1924 – as a guest of the Rockefeller Foundation, Macek lectured at several universities in the US; later, he paid visits to universities in Germany, Denmark, and Italy

1925 – the birth of his second son, Jan Amos

– first public polemics with K. Engliš about social and economic policies, which continued for over 20 years

– as the Dean of the College of Commerce, he started with its reforms

– regular visitor of Friday Talks of K. Čapek

1926 – became a regular professor at the Czech Technical College

1927 – elected a member of the National Executive Committee of Social Democracy

1928 – member of the Parliament

– director of the Higher Socialist School associated with Labor Academy

1929 – re-elected to the Parliament (until 1939)

1930 – the start of a famous controversy with K. Engliš about the causes and cures of economic depressions

1932 – member of a group of experts of the Social Democracy (headed by F. Veselý) working at the Programme for Economic Recovery

1934 – polemics with K. Engliš and his study „Monetary Theories of Dr. Macek"

1937 – co-organizer of the 2nd International Congress of Social Policies in Paris

1938 – 24th September, in the middle of the Munich crisis, Macek appealed to the public to make economic sacrifices for the country's defense. After the loss of Sudetenland, he turned „Naše Doba" into a journal of national unity.

1939 – after the Nazi occupation, he resigned from membership in any party by declaring, „End of parties – the nation is at stake."

1940 – after the closing down of Czech universities, he taught at a secondary school of commerce

1943 – propagated the idea of self-education

1944 – interrogated at Gestapo and the publishing of „Naše Doba" banned

1945 – initiated the re-opening of the College of Commerce and published his opus magnum „Social Economy."

1946 – re-elected the Dean of the College of Commerce at the Czech Technical University

1946 – re-established the journal "Naše Doba" and published a series of articles critical of the imported social and economic policies

1947 – a group of his students headed by J. Habr published a Festschrift to the honor of J. Macek, which criticized the Czech social policies

1948 – after the February Communist coup, Macek was harassed for protesting against the merger of Social Democracy with the Communist Party

1949 – „Naše doba" was closed down, and the teaching load of Macek at the university was curtailed

– the November issue of the Communist journal Nová Mysl published a shattering attack by O. Šik accusing Macek of reformism and betrayal

– before Christmas, Macek and his wife fled illegally abroad under dramatical circumstances

1950 – after temporary stays in Germany, France, and Canada he settled for 11 years in Pittsburgh, teaching at the university

1952 – member of the executive in the Council for Free Czechoslovakia

1953 – professorship at the University of Pittsburgh (School of Business Administration and Faculty of Corporate Governance)

1955 – published two books: Basic Economics and An Essay on the Impact of Marxism

1957 – professor at Chatham College (until 1961)

1961 – moved to Vancouver in Canada, where the family of his son George lived after emigration

1972 – died in Vancouver on 19th February

1990 – the town of Zábřeh granted him ceremoniously honorary citizenship, which Macek was stripped of after his exile

1992 – Charles University published the translation of his „Essay on the Impact of Marxism" (Dědictví marxismu).

2005 – Karolinum Press published his book „How Do We Think,” whose revised and extended version is being prepared for posting on the website. (***The incomplete book can be sent on demand).***

# **Foreword by vladimír benáček**

This book is an edited manuscript from the posthumous archive of unpublished works of Josef Macek, deposited in Vancouver, Canada. Macek was the leading Czech economist, politician, policymaker, philosopher, thinker, and humanist. He was a famous academic debater in his prime days in Prague when he was able to attract a full auditory whenever and wherever he came. This book transcends his economics and moves the frontier of thinking closer to philosophy. It is an attempt to find common roots in the methodology of social thinking both as a science and as a doctrine of vested interests. It is a rare book that reflects a rare human destiny full of good expectations and ominous blows.

Why is it important to expose this "new-old" book in 2024 even though the last touches that the manuscript reveals were in 1967 and, in the meantime, there appeared publications that treated many of its topics in a more modern way? First, because this book is still interesting and inspiring, and in many aspects, it is up-to-date. Second, it is a sort of a testimony of how the Czech, the Central European and even the world thinking in social sciences evolved.

The manuscript was neither edited by a native English speaker nor corrected for more modern ways of argument because that would misrepresent the original style of the author, whose English was excellent but retained many idiosyncrasies of a Central European intellectual, versed in Latin, German and French, the admixture of which to his English scientific writing formed an amalgam of styles reflecting Macek´s unique perception of the times of 1914-1967, and living through changing politics, ideology, geography and culture. We considered all that worth retaining.

Josef Macek belonged to the exceptional generation of Austro-Hungarian citizens of the 1880s, such as Josef Schumpeter, Stefan Zweig, Edvard Beneš, Milan Štefánik, Josef and Karel Čapek, Franz Kafka, Ludwig Wittgenstein or Béla Bartók, who, in their happy days of creative formation, experienced the illusory glamour around the fin de siècle in the Habsburg Empire. However, very soon, all of them had to take over the burden of the Great War, deal with the Empire´s break-up, fight for a social recovery, endure the disillusion of the Great Depression, and resist the rise of Nazism. Next, they had to withstand the occupation, endure the atrocities of the new war, fight again for democracy, and see a next fall – to communism. Their expectations and disillusions materialized in the legacy of their work, which was full of both enthusiasm and skepticism.

This book is a part of such a legacy of vicissitudes. It shows that Macek was thinking about the ways and by-ways of reasoning in social sciences at least since the 1930s. As a fighter for democracy in the Czechoslovak Parliament, as a lasting discussant and opponent of Karel Engliš (the leading classical economist at that time), as a supporter of Keynesian thinking in economics, as an official Czech delegate abroad and also as an active opponent of communism since 1945 – that all shaped his exceptional talent for observation to unexpected directions. As an opposer to the common academic preaching from an ivory tower, his arguments were full of logic, common sense and lessons of history. Macek was an opponent of the policy of appreciation of the Koruna (1920-25) or the impediments to free trade. He advocated the economic and political integration in Europe. He proposed policies for the regulation of cartels and monopolies, struggled for new policies for overcoming the recession of 1929-34 that hit the Czechoslovak economy exceptionally harshly, and he supported the economic measures for the defense against German military attack. During World War II, when all Czech universities were closed down, he dedicated his life to education at secondary schools and was pushing through plans for public self-education.

Any post-covid reader, still rather reluctant to associate the present extension of social "arguments" to the acts of lies or violence, and to accept the disappearance of the borderline between politics and science, can be embarrassed why Macek goes so often back in this book to the narratives of accusation, hasty trial and a harsh punishment. Why is there exposed so often his distaste of doctrinaire thinking that he so often associates symbolically with the Church?

The presence of injustice, allegorized by burning people at the stake by the stalwarts of some religious dogma, repeats very often in Macek's text. It reflects his experiences of the Nazi occupation and especially of the communist takeover. After enduring the war, Macek at the age of 58 rushed into a revival of his educational activities and political enlightenment, striving again for his ideals of youth: freedom, stability and progress. It is no surprise that communists recognized him as an opponent of their way of social organization. What is surprising, is that it was one of the talented young economists, Ota Šik, who took over his liquidation.

In the November 1949 issue of Nová Mysl, the communist party ideological journal, Šik published a shattering attack against Macek, charging him with reformism (in science) and betrayal (in politics).[[1]](#footnote-1) This was at the moment when two Czech generals, H. Píka and K. Kutlvašr, heroes of World War II, had been already sentenced to death in January and May mock political trials, and with the September 1949 show-case trial of László Rajk of Hungary having been already concluded with a death sentence under a similar mock indictment. There was no doubt that the accusation of Macek would be followed with a severe punishment. Already at that time, there was in progress a police hunt in preparation for the trial „against the agents of subversive conspiracy" (so-called Milada Horáková trial).

Let us look closer how a “scientific” liquidation of a person looked like in the Stalinist period. Šik’s critique was based on three hackneyed charges that nearly always yielded desired political results worth punishment:

a/ The opponent is not a Marxist.

b/ The opponent’s moral integrity is very low.

c/ The opponent defends economic and social institutions that are hostile to the socialist revolution.

Such “proofs” can be classified, as is explained in this book, as sophisms underpinned by the proofs by definition and the proofs by authority. Having hardly any relationship to a logic or to facts, such an assault from a position of ideological dogmas was irreversible. Disproving dogmas is a sin and a proof of guilt by itself.

Thus the vast majority of “scientific critique”, protracted on 36 pages, concerned very primitive general accusations, as if extracted from some bog-standard Marxian textbook without any real or personal context. For example, Macek was accused of not only what he did but also what he did not do: for example of not defending or not explicitly writing about such topics like:

\* all economic values are created by labor only;

\* there is a irreconcilable conflict between socialized labor and private production;

\* inequality in income between capitalists and labor is a result of theft;

\* the wages of workers are as high as are the costs of family subsistence;

\* private ownership impedes economic development;

\* capitalist producers cannot know the real needs of consumers;

\* production, which is not centrally planned, cannot be rational because it emanates from the

anarchy of markets;

\* law of the falling rate of profit dominates if the capital per worker is growing;

\* the rate of growth in investment goods must be higher than the growth in consumer goods;

\* returns to capital and profits are an unlawful exploitation of labor.

Needless to say, Macek, as an economist educated in classical economics and standing by Keynesian arguments where reasoning by logic and facts dominated, felt neither any need to address such Marxian dogmas, nor an urge to fight them, since he knew that the majority of them were an ideological junk.

The attack on Macek's moral integrity was even more de-personalized because it was based on charges of class ideology. Thus an opponent not sharing communist class values (Macek was an active socialist) must be automatically a scoundrel deserving the deepest contempt. For example, by admitting that Macek wrote extensively about the decision-making of entrepreneurs and capital owners, Šik concluded that he thus defended "exploitators and parasites" who become "estranged to the right management of production or trade" because "their interests were concentrated on the consumption of champagne and caviar, hobbies and lustful women" (p. 374). The article is rife with such indictments like: bourgeois stooge, traitor, conspirator, servant of fascism, crier of the darkest reactionaries, slanderer of the Soviet Union, purposeful falsifier of truth, etc.

The only relevant part of the Šik's critique (covering no more than 10% of the text) dealt with the interpretation of economic institutions, which Marxists interpret as „relations of production" and „superstructure". Macek believed openly that capitalism was able to adjust to the changing environment and solve its shortcomings, such as unemployment, lack of competition, cartelization or inequity. Prosperity, fair wages and economic freedom were not for Macek in conflict with private ownership. Such views, according to Marxists, were heresies bound objectively to be doomed. Any attempt at „economic reformism" was,, therefore,, a capital offense. The concluding statement: „Professor Macek ... dwells on the view of retaining capitalism. But fighting against capital ... means fighting perseveringly against those who help retain it ... and who deny socialist revolution. And Professor Macek belongs among those" (p. 391) – this was a judgment that was worth gulag in the better case at that time. Given Šik's experience and intelligence, he must have been well aware of it. He was not ashamed to liquidate an honest man with merits much higher than his just for his dubious personal, academic, and political rise. He succeeded.

After a further threat to their liberty, Josef Macek and his wife Bela crossed illegally the Czechoslovak Iron Curtain and emigrated to Canada and later to the United States. Crossing the snow-covered mountain border, which was already heavily guarded by the military, was by itself a heroic achievement. One can read with fascination about it in the memoir of Joseph Hurka[[2]](#footnote-2). The refugees were by one day faster than the secret police who preferred resting on Sunday and postponing the coming with their arrest warrant on Monday. To make the things sure, they instead detained Dr. Křížek, the brother of Macek's wife, who received a 20-year prison sentence in the Milada Horáková mock trial with political opponents by using trumped-up charges against all of them. Macek would receive a more prominent ordeal than his much less exposed brother-in-law.

Even though Macek never paid back by attacking the rising star of Ota Šik through official media, whatever painful was the feeling of injustice for Macek during the rest of his life. He understood the background of the accusation. Šik was one of the rare Czech survivors of the Mauthausen concentration camp. Enduring nearly four years in one of the cruelest Nazi liquidation camps was a case of martyrdom. As to a weird way of social reasoning, Macek ascribed martyrdom a full chapter on proofs. He understood that suffered martyrdom is no evidence of truth of one´s ideas. According to him, such „reasoning" is a reflection of a commitment to „a cruel folly of those who believe that by killing the man they also kill his ideas". Šik, who became the leader of the „Prague Spring" of 1968, was later condemned to a life emigration under a similar communist indictment as he prepared once to Macek.

Macek understood that he was accused of heresy, blasphemy and witchcraft as a price for his life as an honest follower of academic truths, human understanding and social well-being. Not so many economists had a chance to experience the contradiction between the worlds of democracy and totality so many times in their lives and so deeply. He therefore grasped more intensively than any other academic thinker that our thoughts followed not only the scientific strides based on empirical facts, logic or statistics but that there was still a large space remaining for more traditional ways in the quest for solutions: consensus, analogy, superstition, revelation, miracle, silence, authority, sophistry or sacrifice. If he lived in our times, he could add more: emotional manipulation, crowd brainwashing, bubble communities, fake news, bots and trolls on the internet, deepfakes, astroturfing, anti-rationalism, anti-elitism, the cult of ignorance, hate-speech, etc. Although he did not use this vocabulary, he addressed practically all of them. By having the courage to trespass the world of pure axiomatic science and amalgamating it with more rudimentary but omnipresent ways of reasoning, which even science was not immune from, Macek became an innovator in the methodology of social sciences that is still valid.

There is another crucial aspect of Macek's critical approach targeting the Church and theological dogmas. It is a motive that repeats so often in this book. It should be noted that Macek was an exceptional insider in Abrahamic and Mesopotamian religions. Taken from the perspective of profoundly believing Christian, many of Macek´s arguments look offending, thus sinful. However, he did not mean any offense. He was opening the dialogues. As a supporter of British rationalism, he simply exercised logic based on facts. He was free of value judgments and religion served him as a case study. Concerning religion, one should only take the critical words of Macek as a metaphoric approach. Religion, still politically powerful in 1930-1960, offered him a symbol representing Macek's opposition to a dogmatic, authoritarian rule where religions stood as a model. Of course, how we have different models of totalitarian dominance and Churches should be protected as a part of civil society. If economics is about pattern-finding and story-telling, as Edward Leamer of UCLA claimed, then patterns and stories of Churches can often fit into those of economics. For example, we may interpret Macek´s message that religions are prone to abuse as much as any of the authoritarian regimes, which claim to exercise an ethereal mission for saving the world.

Macek was stressing the importance of the opposite of authoritarianism – that opposite, which is now known as an open society. I.e., a society that uses high degrees of freedom in deciding about its scenarios of policies for future development and relies on collective processes of decision-making underpinned by institutions of the democratic social organization: legislative, executive, and judicial. For Macek, it was represented by the socio-political organization of social democracy.

Of course, the degrees of freedom in decision-making in such an open society could not be absolute. There should exist democratic checks and balances in controlling the political system, and its policies should not conflict with the market economies' requirements. Actually, they should be commensurate with the efficiency of the market system. That is why Macek declared himself a Keynesian liberal, and he was, at the same time, the most rational academic opponent of the Communist system of social organization and its drive for human enslavement.

The parallel between the Church (as an authority not consistent with the open society in the first half of the 20th century) and the Communist Parties of the Cold War is transparent from other studies of Macek, especially his Essay on the Impact of Marxism. [[3]](#footnote-3). The dilemma of the Church [[4]](#footnote-4) is as follows:

a) Once the religious values are declared to come from an external Authority (God, the Bible, the Koran, etc.), the leading clergy can leave their implementation into the lives of individuals to their own judgments, i.e., by relying on the power of the Providence alone, akin to laissez-faire policy. If the Providence does not deliver, the religion is bound to a gradual dissipation.

b) The leading clergy establishes an institution – the Church. The Church will can take an active role and establish its own hierarchic authority that acts on behalf of the Providence.

Unsurprisingly, the latter is the preferred solution. So the situation can be modeled as a relationship between a principal and an agent [[5]](#footnote-5). An economic rule that each invisible /virtual/ principal (e.g. a corporation or a religion) needs a visible /real/ agent in order to keep the governance under control, is universal. Thus dangers of degeneration into an autocratic dogmatism by opting for the principle of *sacrificium intellectus* [[6]](#footnote-6) are then very high in all organizations that derive their existence from principles (and their principals) external to individuals. That can be illustrated by a situation when the establishment of an organization is guided by serving "missions" determined by "universal laws", which are not represented by any concrete principal. In this text, the Church (as much as the Marxian “forces of history”) was taken as an example of an ideological concept exposed inherently to such risks. The criteria linking universal laws (e.g. the objectives of the Providence) with concrete decisions at the level of individuals may become so loose that they end up in being replaced by the vested objectives of the self-appointed agents alone. The Church becomes dogmatic and authoritative, as much as the Party that intends to introduce communism.

However, as Macek exposed it in his Essay on the Impact of Marxism, there can be found common patterns, common causes and aims between agents of medieval churches and the practices of Marxist totalitarian regimes, such as Leninism, Stalinism, Maoism or Polpotism. In a similar fashion, it was Fascism and Nazism. All of them derived their totalitarian dogmatism from ideologies presuming that the world and history developed according to the laws of Nature (or some other sort of Providence) exogenous to individuals. Such systems need explicit agents and degenerate easily into a denial of their original idealistic foundations. Objective laws get replaced by subjective autocratic commands.

What was even more visionary in Macek's thoughts was his suspicion (not always explicit but still transparent from the text, see e.g. chapter VI.) that the neoclassical free-market school of economics may be subject to a dangerous dilemma similar to that of the Church. Libertarian economics is also prone to arguments that any decision-making is objectively determined. The principal was even recognized and called "The Invisible Hand". However, his/her existence as an explicit principal could suffer similar shortcomings as those of The God or The Nature. Free market economies cannot function without defined property rights (i.e. laws) and institutions of their enforcement (i.e. courts). The public goods must be administered by the State. All three are agents of Visible Hands. That is why neoclassical economics was so much inclined in its defense to declare itself a positive science of perfect markets where the agents of the (subjective) normative value system must have been excluded from the economic system. Hence, the principals of the free-market system stipulating the social demands and policies are not part of economics. Keynesians, institutional economists, public choice and political economists consider this the weak side of economics.

The problem envisaged by Macek already in the 1930s and confirmed in the 1950s, was that once the presence of an exogenously given "objective" transcendental Principal of the Invisible Hand gets into doubt because of the sudden rise of imperfect markets, captured markets or even missing markets, there arises a need for his/her/its replacement by a visible hand of some secular Authority that would be neither neutral to the system, nor objective or perfect. Thus the tragedy of the Church, preaching the power of Almighty God acting as the Principal of human action, may be repeated, though in a different disguise. If the existence of such a secular Regulatory Authority is eminent because the self-sustaining existence of prudent markets or the perfect market price systems cannot be guaranteed not only for the public or collective goods but often also for the private goods, then Macek preferred that the role of a Regulatory Authority be taken over by the state public administrators controlled by democratically elected politicians.

Macek was a Keynesian liberal (i.e. not a libertarian) because he believed that modern economics required the imposition of a central agent at the level of the State. However, not for all transactions, as it was under the central planning! The majority of private goods should be left for the provision by open markets. The Regulatory Authority should prevent market imperfections and care about the provision of public goods and collective goods, whose demand transcends the level of atomized individuals (e.g. municipal infrastructure). In such cases, it would have to be guaranteed that the State was governed by democratic principles and that the explicitly limited rules of the public choices were controlled by the principles of an open society. This is quite a contemporary vision of social governance caused not only because the world economies have been plagued by such scandals as Enron, WorldCom or Lehman Brothers, or the rise of oligarchs in the post-communist countries, but mainly because modern extremely high efficiency could get into a conflict with perceived justice. On top of it, as Macek has experienced injustice so many times in his life, some self-styled agents could easily proclaim themselves the defenders of the Providence and abuse their position by becoming Visible Hands of a dictator.

By his ability to adjust to academic life as a Professor at the University of Pittsburgh, Macek, though remaining all the time an authentic Central European and the man of the first half of the 20th century, his tenacious life can be taken for a symbol of an academic transcendence over the differences in geography and hazards in ideologies, methodologies and social failures. If we look at this book, finished in 1967, from today's perspective, we can see that in many aspects he missed some ideas, problems and authors that we consider now important. Some of them were known in his time. For example, chapters on logic or empirics could have been more „modern" if they had included more extensive treatment of the pitfalls of language (semantics, syntax, grammar, pragmatics), which were introduced into the methodology of sciences Ludwig Wittgenstein.

Probably the most influential impact of philosophy on social sciences was initiated by Karl Popper. In his The Logic of Scientific Discovery (1934) psychologism, naturalism, inductionism and logical positivism were replaced by a set of methodological rules called falsificationism. Though Macek was not referring systematically to this source, we can see that he felt, at least intuitively, the conflict between proofs by logic and proofs by facts. He understood that science advances by (often) unjustified, exaggerated guesses and intuitions of trial-and-error, followed by unconstrained criticism. Hence, only the hypotheses that remained unscathed were allowed to count as science.

That brings us to a gap in responding to the methodological advances brought by Thomas Kuhn[[7]](#footnote-7). However, Macek is consistent in understanding that science and human reasoning are trapped in „paradigms” and their progress is not linear. Social sciences are still in deficit in the reliability of their predictions, which casts doubts over their scientific nature. The achievement of equality between reality (i.e. an ontological substance which is supposed to be objective) and its cognition (theory) is virtually impossible, according to Macek. Those who claim the opposite are charlatans. History is not an autoregressive model. Pataphysics and black swans can turn the history to unexpected directions. But, at the same time, Macek ascribes a high pragmatic value to all quests for diminishing the gap between the reality and theory. Thus his reasoning is not in conflict with the seminal paper of Milton Friedman on the methodology of positive economics [[8]](#footnote-8) where pragmatic achievements of predictions of a theory, or of an econometric study, are a sufficient condition vindicating research.

One of the most controversial issues in science is the treatment of values. Many economists, after adjusting to the methodology of natural sciences, shunted values and value judgments outside of economics. They agreed, at the most, on taking them as an exogenous parameter (i.e. an objective) for their analyses. They presumed a hypothesis that economics must be about facts, i.e. about what “is” and not about what “ought to be”. Macek, however, similarly like Joan Robinson[[9]](#footnote-9), comes with a hypothesis that values are an indispensable part of economics, law or politics and the opting for certain values is not at random. Therefore social sciences are here for explaining why it is so or by which mechanism we decide about our values, policies and institutions.

Meanwhile facts of “what is” can imply only other facts emanating from the chain of causality, facts can never automatically imply “what ought to be”.[[10]](#footnote-10) It is only the humans who can add there their implication by applying their choices, priorities and errors. And that is the snag of pure positive economics that can explain quite well the past facts but hardly the decisions about the future. Mechanical determinism does not function with the humans who exercise free will.

Macek was raised in the traditions of Mittel-Europa that stressed the role of institutions, history and teleology. Even so, during the 1920s and 1930s he incorporated into his studies the Anglo-American methodology that reckoned more on descriptivism, quantification, subjectivity in modelling and skepticism. Macek thus became a representative of the universal, philosophical school of European economists, such as Adam Smith or Maynard Keynes were, who had to master, except for a series of various economic concepts, also history, law, politics, statistics, geography, ethics, Latin, religion, *belles lettres* and arts.

The shift to a narrow specialization that came after the war, revealed also the costs of a trade-off: a breakthrough in one field of science was slowed down by a professional blindness related to other fields. The melancholic statement of Albert Einstein about science – "a perfection of means and confusion of aims seems to be our main problem" – is particularly befitting economics. We can often see a paradox how economics is practiced. How on the one hand a narrow community of pure theoretical or econometric economists can come out with amazingly sophisticated techniques saying a myriad of circumstances of functioning of a small particular problem whose social significance converges to the triviality of nothing. Meanwhile, on the other hand, the other group of more outspoken “verbal economists” is able to communicate to the world (nearly) nothing about everything. I am saying neither that the former cannot mark a scientific progress, nor that the latter chatterboxes are not socially useful. However, I must agree with Macek that economics should strive for achieving a higher social value added per their research. The aim of economics should be the contribution to human happy lives in both material and spiritual sense. That is also a topic that economics could study.

Thinking and reasoning in social sciences „is a long and slow process full of fascination, where victories are constrained by errors, omissions and abuses“, as Macek concludes in this book.

Prague, 5st August, 2024 Vladimír Benáček

**PREFACE by Josef Macek, 1967**

Let us wish that a healthy mind be in the healthy body.

I show what you can give to yourself.

Juvenal

"What the scientist cannot prove, he has no right to assert as existing" has been the principle of scientific knowledge since the time of Galileo. Proof is the backbone of knowledge. Without proof, a scientific hypothesis is only a flush of wit. Proof is an indispensable instrument of justice. In the law of civilized states, there is an accepted principle that everybody is assumed to be innocent until his guilt is proved beyond a reasonable doubt. A civil right does not exist if it cannot be proved.

Proof is a tool of democratic politics where people must be convinced by reasons and evidence and not forced by violence: Word, not sword! Demand for and acceptance of different kinds of proof characterizes various religions and the stages of their development. The demand for reasons, examination of evidence, and testing of proofs are becoming general and urgent now when people think of paradoxes of the present "human situation."

The two world wars in the first half of this century were evidently not caused by "the blind forces of nature," and the world economic depression between them was not due to "the niggardliness of nature." These disasters, and so many other ones, were man-made.

The suspicion spreads that something is wrong with the thinking and behavior of the doers, the sufferers, or both. Why does the government of the people, by the people, and for the people hesitate to cope with "the misery amid plenty" and with "the plenty amid misery"? Is there a lack of the emotional impulse to help the sufferers? In general, certainly not. We see many institutions for individual help or care and various international campaigns to help the unfortunate, backward nations in their famines, floods, and lack of efficiency in self-help.

What is needed are the ideas for solving the urgent social problems: what to think and what to do? It is impossible to teach how to conceive an idea, but it is necessary to examine and test what is offered as a remedy or prevention of evil and suffering, as well as what is defended as adequate means to the set purpose. These are the problems of proof.

In the Age of Reason, the motives of human acts were supposed to be the results of intellectual consideration, of weighing the pros and cons, costs and benefits, and, in the last resort, of the calculus of pleasures and pains. These were the days of positivism and neopositivism, Carnap and Wittgenstein, and Einstein and Fermi. It brought an enormous breakthrough in natural sciences but far less progress in social sciences, dominated by descriptive economics and econometrics. This nearly dogmatic exaggeration of the role of the intellect in social sciences provoked a revision. It was found that the driving force in human activity is emotion and that the reason is only a directing force. Only as if it were less important where you go, if only you go.

Then, the pendulum swung in the opposite direction. It started with Lenin, Stalin, Hitler, and Mao. But not only with them. The role of reason was minimized, and emotion, surging from the unexplored unconscious and impressions, was proclaimed the mighty ruler of humanity, hardly restrained by inhibitions of the tradition, education, convention, morality, shared sense of rationality, or fear of punishment in this or the future life. Appropriate alternative scientific or pseudoscientific theories were invented by generalizing specific facts and disregarding others. The result was the retreat from reason in education, as well as in legislation and politics. The role of reason, and therefore also of error, was underestimated.

We can hardly deny that this exaggeration of the role that irrational factors play in human thoughts and behavior contributed much to the present human situation worldwide. It shifted the responsibility for men's acts from the intellect to supposedly uncontrollable forces in the depths of their personalities, as if Freud won over Carnap. The theory of irrationality led to a theory of irresponsibility. We can observe the results in education in sexual relations, in rising criminality, especially of juveniles, in acts of vandalism in peace and barbarism in war, and particularly in the helplessness of democratic governments to cope with the problems arising from the disproportion between the technical possibility in production, and political and business inability to distribute the fruits of production. There arises the clash between priorities and aims: those of economics, aspirations of power and human hierarchies, and morals represented by equity and justice.

Ancient philosophers, prophets, and poets were well aware of the role of passion. Today, nobody would deny the influence of irrational factors on our opinions. Still, if intellect is a task in our decision-making, we have to look for ideas, not to kindle emotions. After the unfortunate Retreat from Reason, the Return to Reason is necessary. The new rationalism cannot be a system of tenets supported merely by axioms and assumptions that suit the theoretical elegance. It should be a consistent application of the scientific method in the search for solving everyday problems of life. The theories should be consistent with the empirical evidence and facts.

The scientific method has been successfully adopted in the natural sciences and physical technology and has secured their steady progress. However, the thinking on social problems and behavior is still under the influence of unscientific, dogmatic views, the result of which is the present paradoxical and alarming state of affairs inside the nations and among them. The power, military, technological, or economic, often dominates over the democratic arrangement of human relationships. A failure in social decision-making is always evidence of some error in thought. The test of truth, justice, and/or the usefulness of an idea rests in the situation that "it works" without someone being left worse off. We call it a Pareto-efficient or Kaldor-efficient outcome, which can also be proved to work as supposed and expected. If the policy measure hurts someone, he/she should be compensated for the loss.

Although it is impossible, on the one hand, to teach how to conceive an idea or a hypothesis but, on the other hand, it is necessary to learn the method: the principles of proof to find out whether an idea is true or just, or useful.

How important is the study of proving, i.e., of defending a good idea and refuting the wrong one, Sir Josiah Stamp, a late prominent English economist and lawyer (1880-1941), showed to the readers of his book "Ideals of a student" in the chapter "On Proving All Things" (1933). Let us read his opinion:

"Every student ought to be an accurate judge of the technique of proof in at least one field, whether it is a historical fact, a statistical generalization, a legal judgment, a physical constant, a critical conclusion of Gospel codices, a mathematical deduction, or a theological dogma. But he also ought to have some preparation for what is involved in the other fields and the apparatus of thought different from his own. "…" I am weary of minds, eminent in legal studies and used to the canons of judgments, which are appropriate to the closed system of statute and case law principles, logically dependent upon itself and only slowly advancing down to precedent, trying without any other experience to form a judgment on a purely economic issue, and impatient, because it cannot be reduced to dichotomy of the alternatives. I am weary of the mathematicians expecting money to behave like an equation, of physicists examining religion as an emotion in terms of deterministic causation, of theologians and philosophers working the social machine with the brotherhood of men in place of the principles of diminishing utility and substitution; of engineers replacing democracy with technocracy." … "I would rather deal with the man in the street than an opinionated doctor for a judgment in economics, theology, or music. Judgment increasingly depends on common-sense synthesis and the convergence of different attitudes toward life and its qualities."

These words of Sir Josiah Stamp point out a two-fold problem concerning proof: the ability to construe a proof in the correct way and the ability to recognize the conclusion of a proper proof and accept it. We may observe that people trained in and accustomed to deductive thinking are often impervious to arguments based on observation of facts. Those accustomed to accepting evidence by authority do not consider the logical arguments decisive for their convictions. The failure of some highly educated people in politics can be attributed to their one-sided training in one branch of soft social science and lack of training in other ways of thought and presenting appropriate, convincing proofs. The trick rests in recognizing a valid proof from an invalid one and accepting its conclusion or refuting it. Several prominent experts in natural sciences and technology embraced Marx's or Lenin's doctrines, whose errors they would have recognized if they had met similar errors in judgment in their own line of studies. For example, judgments in hasty generalization, neglect of plurality of causes, non sequitur, inconclusive conclusion, or a conclusion derived from false data or erroneous statistics.

We may become very expert in proving something by controlled experiments in physics or mathematics in the specialized research in natural sciences. However, that may have taught us nothing about how a historical or economic generalization is supported and justified. Indeed, giving us too intense training in one form of proof may have unfitted us from recognizing the cogency of frailty over different orders of proof required for social sciences.

There are three primary purposes of proofs:

1. That a statement or a proposition is true or false.

2. That an act is just or unjust.

3. That something is functional, that is, it offers a fit means to a set purpose, particularly that it is conducive to human welfare, which is an economic, political, and moral aim.

The problems of aiming at these purposes have always been objects of thought. In the first category are the ancient Greek philosophers. In the second, the ancient Roman jurisprudence won the laurels. The third category of proofs became an object of more profound interest only after the greater population density, division, combination of labor, and progress in knowledge and technique. These made people more dependent upon each other, and therefore, the well-being of individuals became a social problem. These are real problems of capitalism, which democratic negotiations and democratic governance over public goods should solve. Social welfare ceased to be a question of individual knowledge, skill, and industry. It became a problem of economic and political institutions and actions. The errors of those in power would bring harmful, sometimes even disastrous, results for individuals and whole nations.

The vital interest we all have in the cognition of truth, the rule of justice, and the propagation of welfare, as well as in avoiding errors in pursuing these aims, makes the study of proof an essential component of general education. Most studies in scientific methods were written by logicians (e.g., Carnap), mathematicians (Walras) [[11]](#footnote-11), naturalists – especially physicists (Einstein) – and linguists (Wittgenstein). Jurists discussed problems of proof, usually from the view of legal practice only. Relatively few treatises in epistemology were published by economists and politicians. Many influential business people and labor leaders seem unaware that the theory of marginal utility has similar significance for understanding economic facts as the theory of Copernicus had for astronomy. Business and labor policy is generally still based on the labor cost theory of value, even though it was refuted at the end of the 19th century.

This book surveys the various kinds of proof as to their object, purpose, types of evidence, and probative power, with special regard to social facts and theories. The plan of the treatise is as follows: After discussing the purpose of proof and its pre-suppositions (in Part I), there is a classification of proofs in three categories: proofs of logical consistency, of facts, and of values in Part II. Then follows the analysis of kinds of proof as to evidence offered for or against a proposition in Part III. The results of the analysis are then summed up in two ways. In part IV, an attempt is made to show what kinds of proof are used in the five main fields of thought. In part V, the conclusion is drawn from the historical development of proofs as to the tendency to abandon certain kinds of proof and replace them with proof by experience. To a certain degree, parts IV and V are a synthesis of the analytical part II and its recapitulation, so to say, in horizontal and vertical ways. Some examples of proofs are either confirmation or violation not of one but of several of the various proving principles, and repeating them in the appropriate light seems useful.

It is my pleasure to express my thanks to all who helped me prepare this book. First, to Dr. Archibald M. Woodruff, Professor and formerly Head of the Bureau of Business Research, University of Pittsburgh, now the Chancellor of the University of Hartford, Conn., for his unceasing interest in this study and many-sided help. I thank the former law professors at the University of Pittsburgh, Dr. Charles B. Nutting and Dr. Charles W. Taintor, who read parts of my manuscript and suggested improvements. Also, the Rev. James Gordon Gilkey, Dr. H. S. Frank, Professor of Chemistry (all of the University of Pittsburgh), and the professors of Chatham College in Pittsburgh, Dr. Frank Hayes and Dr. Albert Ossman, who read and kindly amended parts of the manuscript. My son Jan Amos Macek devoted much time and effort to making the text more readable. For the patient help in preparing the typescript I am exceedingly obliged to Miss Nancy Roab and Mrs. Margaret I. Van Buren at the University of Pittsburgh.

I thank publishers of copyrighted books for their permission to quote from them.

West Vancouver, September 1967.

Josef Macek

Remark of the editor VB: The chapters of the announced book will be posted on <https://benacek.net/samizdat.html> gradually in 2025, as the manuscript will be digitalized and proofed. Chapter IV, displayed below, is an example of the book.

**Chapter IV.**

**Burden of Proof. Admissibility of Proof. Tactics of Proof**

*We must neither lead nor leave men*

*to mistake falsehood for truth.*

*Not to undeceive is to deceive.*

#### Richard Whately

“Prove to me that God exists.”

“Prove to me first that God does not exist.”

“He, who asserts, has to prove.”

“Who denies what most people of many times and countries believed has to disprove it.”

Similar disputes are fairly common in which the burden of proof is shifted back and forth from one adversary to another. The importance of liability in producing convincing proof is seen in law no less than in science. According to the Anglo-Saxon idea of justice, everyone is considered innocent unless his guilt has been proved beyond a reasonable doubt. The burden of proof is with the prosecutor. In the Nazi judicial system, the defendant had to prove that he did not commit the crime alleged or imputed him. The burden of proof lay upon the accused.

When Copernicus evolved his theory, it was up to him to prove that this theory explained the phenomena in question better than Ptolemaic astronomy.

Should a politician propose obligatory liability insurance for car owners and drivers, he would have to prove that this measure would protect the just interests of the people entitled to damages in auto accidents better than the law only determining the responsibility of the drivers. The liability to prove is usually considered a "burden," but under certain conditions, it may be an advantage, which in a lawsuit may assure victory.

There is a general rule: He who asserts has to prove. But exceptions are acknowledged: Self-evident statements do not need any proof. Nor do they admit any. Further, he who asserts what has been the common opinion is not obliged to prove it - the adversary has to disprove it. If there is a fair presumption in favor of the person who asserts, the burden of proof is shifted upon his adversary. For instance, if stolen things have been found on the suspect, he must prove that he has legally acquired them.

To decide the burden of proof, the theme to be proved (*thema probandum*), and who is to prove it must be precisely stated. For instance, in the old German, English, and several other systems of law, the witness, brought in by either the prosecutor or the defendant, testified not to an event of his direct sensual perception of a fact (e.g., the killing of a person) but to their trust in the accused person or his accuser respectively, rather than its refutation. This kind of testimony was called *compurgatio*. In science, the theme of a proof may be a modification of a theory rather than its refutation. For instance, Kepler did not refute the Copernican theory; he corrected it.

Some historians deny the authenticity of the words of Jesus, or some deny even his historical existence. Still, they do not deny the moral value of the Golden Rule, which is attributed to him.

The disproof is usually easier than the proof. As Augustus de Morgan has remarked: "When we set on to prove any thesis, we must be prepared to disprove any one of the indefinite numbers of other assertions that conflict with it; while to disprove any thesis, we need only to reduce it to absurdity, which is often possible without our being prepared to prove a single positive assertion about the matter." [Alfred Sidgwick, Fallacies, p. 250.]

The fact that disproof is easier than proof sometimes causes discontent, even indignation, in the opponent or the audience: his opinion has been refuted, but none other offered in its place; he demands "something positive." This discontent or "dismay of emptiness" is why many enthusiastically embrace another after discarding one opinion or belief in one dogma. How many people cannot stand the fact that "we do not know" *(ignoramus*) even if they are consoled that it does not mean that "we shall never know" (*ignorabimus*). Thomas H. Huxley contended that Agnosticism (a term coined by him) is not and cannot be a creed, that "this principle may be stated in various ways, but they all amount to this that it is wrong for a man to say that he is certain of the objective truth of any proposition unless he can produce evidence, which logically justifies that certainty. This is what Agnosticism asserts; in my opinion, it is all that is essential to Agnosticism. That which Agnostics deny and repudiate as immoral is the contrary doctrine that there are propositions which men ought to believe without logically satisfactory evidence. Reprobation ought to be attached to the profession or disbelief in such inadequately supported propositions".

Marking precisely the theme of proof (*thema probandum*) and keeping to it are especially important in polemical discussions. Sometimes by an error of the disputants, sometimes by the inexperience of the moderator, but sometimes by the sophistry of the losing party, "the debate goes astray," and the theme to be proved shifts and changes. It switches to another kind of thought, missing even the point of the issue and proving something else. These mistakes in presenting proof are widespread in politics and defense in criminal cases.

So far as the *thema probanum* is concerned, we must realize the implications. In order to prove that something does not exist (or did not exist), it is enough to prove that it is impossible. Impossibility involves non-existence. Incredibility does not include the impossible, and "incredible" is something other than "not proved." If an argument proves something does not exist, it does not prove it is impossible.

For the burden of proof, it is also significant whether the adversary rejects a statement in principle or whether he doubts its validity or applicability only in the specific case under discussion. In politics, a principle is often praised "in general" (e.g., freedom of trade) but rejected in the special case under consideration. You cannot prevail upon the adversary if you can prove only the soundness of a principle "in general" but also if you can prove its soundness in the given case. Your "burden of proof" is to prove this, not the soundness of the principle. (The general principle might have been admitted - hypocritically - by the opponents.) In science and philosophy, we meet similar deadlocks or ties when it is contended that a proposition is true "in theory" but wrong "in practice." Immanuel Kant considered this opinion false and dangerous and devoted one of his smaller tracts to its refutation.

We often hear this attempt at refutation in politics: "Your proposal is good, but it is premature. The situation (or people) is not ripe yet." In this case, the *thema probandum* is twofold: the soundness of the proposal and the "maturity" of the situation. It is easier to prove the first than the second theme. The usual result is characterized by the adage "Too little too late."

The burden of proof is sometimes alleviated by what is called presumption. Actually, no proof would be possible without some presuppositions, that is, without presumptions of basic conditions, cognizance, and knowledge. We proceed in the research of nature on the basic supposition of order in nature, and we reason on the supposition of certain principles of thought.

The presumption is a tentative acceptance of a fact. "In the law of evidence, a presumption is a conclusion or inference as to the truth of the fact in question, drawn from some other fact judicially noticed or proved or admitted to be true." [W. J. Byrne: A. Dictionary of English Law. London, Sweet & Maxwell, 1923.] Some presumptions are legally determined, e.g., that an infant under seven years of age is incapable of committing a felony. This legal presumption cannot be disproved. The same presumption is used in cases of defendants aged between 7 and 14. But here, the proof of felonious intention is admitted. There are presumptions that the tribunal is at liberty but not compelled to draw from the facts presented.

Archbishop Whately tried to use the principles applying to the burden of proof as a weapon against disbelief. He wrote: "There is a presumption in favor of every existing institution." He alluded to the Christian church as an existing institution and claimed a presumption of credibility in favor of its teachings. But this is another question.

According to Alfred Sidgwick, the existence of Christianity does not prove its divine origin. Paganism also exists. Slavery existed. Belief in witchcraft existed. Whately initiated another presumption: "There is a presumption against anything paradoxical, that is, contrary to the prevailing opinion; it may be true, but the Burden of Proof lies with him who maintains it; since men are not to be expected to abandon the prevailing belief until some reason is shown." (p. 91-92.) This opinion seems to agree with the one exception from the general principle of the Burden of Proof, but it is contrary to the requirement of "sufficient reason," as is demanded in science and law.

Presumptions quickly become component parts of the philosophy of life. We inherit many of them and acquire more by generalizing our experience; thus, presumptions become prejudices. Such presumptions prevent people from recognizing facts and searching for their causes. For instance, until the world economic depression of 1929-1936, more people than now presumed that unemployment was a result of laziness; lack of economic success was considered the result of a lack of skill, industry, application, and "bad luck." Well-to-do people often thought that success was a reward of virtue and that failure was the effect of some guilt - "unless the contrary was proved."

The last economic depression refuted these presumptions, for it was found that people could not find any jobs even when their training, experience, industry, and honesty were beyond any doubt. Besides presumptions, there are also "anti-presumptions," which may shift the burden of proof upon other shoulders. Hearing about a new miraculous medicine against several diseases, we presume it is quackery. In his campaign against import duties on grain, Richard Cobden once said: "If our corn-laws were shot upon Mars, the inhabitants of this star, if there are any, would say: These laws could not be made by anybody else but by English landlords."

Adam Smith defended this anti-presumption: " The proposal of any new law or regulation of commerce, which comes from this order (e.g., businessmen) ought never to be adopted till after having been long and carefully examined not only with the most scrupulous but with the most suspicious attention. It comes from an order of men, whose interest is never exactly the same as that of the public, who generally have an interest in deceiving and even oppressing the public and who accordingly have, upon many occasions, both deceived and oppressed it." [Adam Smith: Wealth of Nations, Book I, Ch. XI.]

There is a widespread presumption that experts are to be trusted in their field of work /*peritis credendum est in arte sua*/. That is the case for referees in scientific journals. But how often have experts proved to be conservative, hostile to new ideas, and therefore against progress in their own fields? Remember the attacks of experts on William Harvey, the discoverer of the theory of blood circulation, and on Jenner, the discoverer of vaccination against smallpox. How preposterous were some renowned economic experts regarding the world economic depression (1929-33) and its cure?

Close to the presumption, there is the legal concept of assumption, which is an auxiliary form of proof where direct test is impossible. It is the admission of facts, without which we could not explain, refute, or prove another fact. For instance, assuming that the speed of two cars in the collision was only 20 m.p.h., as the defendant asserts, how does one explain the force of impact of the vehicles, which caused several deaths and complete demolition of the cars? Assumptions depend on the judgments that eventually corroborate a proposition or bring it to absurdity. An assumption is a postulate offered and accepted to make further inquiry and its conclusion possible. Assumptions occur in all kinds of proof. A startling example of assumption in theology is the statement of the Jewish theologian Milton Steinberg: "It remains true of Judaism that it tends to assume God rather than to demonstrate him, that it looks at him less as a conclusion than a postulate."

A counterpart to the liability to prove /i.e., the burden of proof/ is the admissibility of proof. The meaning of this term differs in the „closed system" of law and the open system of science. In science, any proof that corresponds to the principles of the scientific method is admitted. Scientific proof aims at truth or at least at the highest degree of certainty.

In law, the admissibility of proof depends on the discretion of the law-maker, whoever he/she may be. They may decide that a scientifically admissible proof is legally not admissible. E.g., in some countries, a blood test is not admissible in paternity cases. In the 19th century in England, the testimony of a witness who declared that he was an atheist was not admissible. In ancient Athens, the testimony of slaves was admissible only when it was obtained by torture, except when a slave had turned informer. See J. S. Mill: On Liberty. Ch. II, and R. J. Bonner: Evidence in Athenian Courts, 1905, p. 34.

The noted American law expert, John Henry Wigmore, wrote on the admissibility of proof: "While the historian or the naturalist may, as he pleases, set aside and preserve data of the highest helpfulness or may pass judgment upon his facts immediately and finally, the legal tribunal is, with us, divided in function: the judge passes first upon and sets aside the titbits for the jury; that which is not worth considering, for one reason or another affecting its value, never reaches the auxiliary functionaries, the jurors… This process of determining the admissibility of evidence, as distinguished from the demonstrative and conclusive quality, is, from the point of view of logic, a decidedly unique process worked out clearly in no other department of life. Little considered by our logicians, it is commonplace in the judicial experience. The proof is the result of that natural process of mind, which all men would use in weighing the evidence that has already been admitted." [The Principles of Judicial Proof. Boston, Little, Brown & Co. 1913, p. 12-13].

The great significance of the admissibility of proof has been stressed in even more trenchant words by Charles McCormick: „Rules of evidence in Anglo-American law are not a science of weighing proof; they are chiefly regulations governing the admissibility of proof."

The admissibility of proof is especially important in cases where the theme to be proved may be obscured or concealed from the jury by skillful tactics of the lawyers. Some examples: In a process about inheritance, claimed by a "natural" daughter of a Californian millionaire, her attorney prepared the public opinion in such a way that his client would have most probably won if the case had been brought before a jury. But the judge dismissed the claim of the "natural" daughter for the reason that no proof of her claim had been supplied. ]See A. M. Frye and A. W. Levi: Rational Belief, Harcourt, Brace & Co., New York, 1941, p. 219.]

According to Austrian law, when in a civil action, no other evidence is supplied or deemed satisfactory, the court hears both parties' statements /which, of course, contradict each other/ at first without an oath. The purpose of this hearing is to ascertain which party seems to deserve more credit. Then the court decides which party should be admitted to repeat its testimony under oath. It is evident that by admitting one party to the oath, the court practically has decided the case in its favor.

The burden of proof is relatively more straightforward if the theme to be proved is a question of logical consistency rather than a question of fact or value. The arbitration in labor disputes is usually successful if the problem is to decide the controversial meaning of words or phrases in a collective contract. Still, it is seldom successful if the arbiter has to determine what is to be set in the collective agreement to be made since this is a question of value and power.

How heavy or light the burden of proof is also depends upon the audience's mood. Sometimes, the audience accepts a statement without proof favorably or rejects it, admitting no proof at all, and sometimes accepts the statement but asks for proof (Sidgwick). Counsel and politicians are well aware of the importance of the atmosphere in court, when trained judges are to decide or when the decision is up to the jury, composed of laymen. Politicians prepare their arguments both for their adherents and their opponents. The burden of proof is always upon the politicians. Some speak well only in a favorable atmosphere, while others are most effective in crushing repartees. A speaker in court has not only to prove his own case but also to disprove that of his opponents; it is then up to the judge to give the reasons he decided as he did. This burden is equally heavy.

A lack of reasons supporting a statement is insufficient evidence of its falsity. There are numerous examples of correct scientific notions that could not be proved convincingly enough as soon as they were conceived but only after scientific methods and instruments for their testing were developed. For instance, Galileo discovered the phases of Venus in 1611 after they had been denied by Copernicus' adversaries. Heliocentrism was held before Copernicus by Aristarchus of Samos (ca. 310-230 B.C.) and by Aryabhatta of India (ca. 1322 A.D.)

Sometimes, criminals are acquitted for the lack of evidence. In other cases, innocent people are unable to supply convincing evidence of their innocence because, e.g., they cannot prove an alibi, although they were not at the place of the crime at the critical time.

Similar cases of lack of evidence occur in philosophy and science. J. St. Mill [Three Essays on Religion, part III, Theism] wrote: "There is, in science, no evidence against the immortality of the soul, but the negative evidence, which consists in the absence of evidence in its favor. And even the negative evidence is not as strong as negative evidence often is".

If there is a lack of convincing reasons for and against a statement, the question remains open, even if it is presented in such a stirring form as Sidney Smith did in one of his sermons: "Let us ask, which is more commendable and noble? To believe in Christianity without proof or disbelieve in it without proof."

\* \* \*

There is a close relation between the "burden of proof" and the tactics of proving, especially when the task is to convince a jury or political meeting (as opposed to a discussion between scientists). At times it is better to marshal the reasons and then offer the conclusion, or even not to give any conclusion and let the audience reach it themselves. (The latter was the tactics of Socrates as presented by Plato in his dialogues.) Sometimes, the opposite procedure is chosen, that is, to give the conclusion first and then the reasons.

In any case, it is necessary to anticipate the reasons or arguments of the opposition. It is not excluded that we become aware of the presuppositions of our own opinions in a discussion. Failing to pay attention to the opponent's reasoning or to the reasons for opinions that prevail in a meeting will cause the speaker's arguments to fall flat.

It is helpful to become acquainted with the opinions of the adversaries and their reasons before a discussion: to read the books and periodicals of the opposite political party, the "heretics" of the "left" and "right." The truth shines brighter after it has gone through the conflict with error. [J. S. Mill: On Liberty, p. 79]. To ascertain the correct meaning of a statute or judge-made law, the litigants take the case all the way to the Supreme Court as “test cases.”

The principle of Burden of Proof appears in a transparent disguise in the adage "*caveat emptor*" (The buyer beware!) The buyer should ask for evidence of every statement of the seller so far as its falsity may impair his interests. He should convince himself of the truth - the burden of proof is upon him. Nowadays, there is a tendency to shift the responsibility for the quality of merchandise upon the seller: *Caveat venditor*! "Satisfaction guaranteed!" In some countries, the worker must be acquainted with dangerous machinery or chemicals since the employer is not legally responsible for injury, which the worker may suffer by lack of knowledge or attention. The burden of proof of responsibility is shifted upon the worker.

Suppose the required proof is not entirely satisfactory ("beyond a reasonable doubt"), and the judge must decide this way or that way. In that case, the principle of the old Roman law should be applied: "*In dubio mitis*" and "*In dubio pro reo*" (In doubt, decide milder. In doubt, decide in favor of the defendant.)

**PART II.**

**Chapter V.**

**Survey of the Kinds of Proof.**

*Those who believe that they have the truth,*

*ask no favor, save that being heard;*

*they dare the judgment of mankind,*

*refuse cooperation; they invoke opposition,*

*for opposition is their opportunity.*

*Georg Jacob Holyoake*

**According to their objects, there are three kinds of proof:**

**a) proof of logical consistency (logical proofs)**

**b) proof of fact (factual proofs)**

**c) proof of value (axiological proofs).**

As logically correct thinking is necessary in every kind of proof, attempting to discuss a special kind of proof as logical may seem illogical. But we shall find that there are sound reasons for this classification. Often, the sole purpose of proof is to show either the logical consistency or inconsistency of a statement with the accepted statements (of knowledge or belief), as well as other reasons and further consequences as to facts or values not being under consideration.

In the category of proofs of facts, there is a wide array of goals - to prove reality, possibility, probability, improbability, non-existence, and impossibility; to prove various relations of the admitted facts, such as co-existence, exclusion, causality, correlation, interdependence, interaction, instrumental relation, etc. All that may be the object of affirmation, doubt, or denial, and therefore may call for proof.

**Proofs of value, or axiological proofs** (*axios* in Greek means “worthy”), **tackle the most controversial propositions**. There are different kinds of values: moral, political, esthetic, economic, religious, technical, etc., with their respective criteria, e.g., moral good and moral evil, legality, political convenience, individual or social welfare, etc. Often, the judgment of value is mistakenly used to prove reality (wishful thinking), or the criterion of one kind of value is used to prove or disprove the value of another type, e.g., economic value is used to defend political convenience and vice versa.

In surveying the various kinds of proof and methods used, we must consider their impact upon those for whom they are destined. Here, we meet a problem that is often faced in medicine. A doctor asked what was the cure for a particular disease answered: “We physicians do not cure diseases; we treat patients.” Disproving an inveterate error, prejudice, or superstition is sometimes as tricky as healing a leper.

To invent or to choose relevant arguments presupposes knowledge both of the cause in question and of the character of the audience, their way of thinking, and their feeling. The desirability of knowing the opinions and the reasons of their adversaries was acknowledged by the papal permission granted to Jesuits and Dominicans to read the prohibited books of heretics and infidels, whose mission was to eradicate heresy by the refutation of the unorthodox views.

To convince others, one has to be convinced and confident in oneself, but sometimes the reasons, by which one has been convinced, do not prevail upon another person, even though the proposition to be proved is true. Here lurks the danger for those who read only the adversaries and do not pay equal attention to the refutation of their half-truths or positive errors in other studies. Many educated converts to Communism embraced its doctrine because their former opinions about social problems were too shallow. They did not care for arguments against the Marxian doctrine because they were uninformed and unprepared for its criticism. Lenin confessed his discovery of the missing positive plan of the victors only after the successful social revolution in “October” 1917.

If a proof is to be fully convincing, its author must be able to defend his views against all actual and even possible attacks. He may even anticipate and refute them before his adversary launches them.

Here is the advice of J. S. Mill: “Whatever opinion a person may adopt on any subject that admits of controversy, his assurance if he be a cautious thinker cannot be complete unless he is able to account for the existence of the opposite opinion. To ascribe it to the weakness of human understanding is an explanation that cannot be sufficient for such a thinker, for he will be prone to assume that he has himself a less share of that infirmity than the rest of mankind and that error is more likely to be on the other side than on his own” (Three Essays on religion, p. 127-128).

\*\*\* Remark of the editor: If you are interested in the rest of the book in an unedited format, ask [vladimir.benacek@cantab.net](mailto:vladimir.benacek@cantab.net) for an e-mail delivery.

1. See his pamphlet Šik, O.: Reformismus v politické ekonomii (Reformism in the Political Economy). Nová Mysl journal, 1949, pp. 363-398. [↑](#footnote-ref-1)
2. The memoirs were published in Hurka J.: "Fields of Light" at Pushcart/WW Norton, New York, 2001. Joseph Hurka is the son of Josef Hůrka, a member of the anti-communist resistance, who helped Josef and Bela Macek to escape the police and cross illegally the mountains to Germany. We can read on pages 103-110 that Maceks' departed on Sunday 18th December 1949 by pretending to go out for Christmas skiing in the north. Instead, they took a train to Františkovy Lázně in the south, stepping out at Nebanice village, still some 25 km before the border. To avoid the attention of police informers, Maceks were casually dressed, carrying just a briefcase with papers. So poorly equipped, the dramatic night crossing took place in the forest between Libá and Hohenberg, where the border was formed by the frozen Ohře (Eger) River. [↑](#footnote-ref-2)
3. Published by University of Pittsburgh Press, 1955. See also its Czech version “Dědictví Marxismu”, Univerzita Karlova, Prague, Acta Universitatis Carolinae, Oeconomica, no. 2, 1991. [↑](#footnote-ref-3)
4. We should ascribe "The Church" a wider symbolical meaning, which transcends its limitation to the Catholic or the Christian Church only. It should include all secular authorities of religious organizations, which derive their decisions and which set their values on behalf of God and which may even presume that their acting is exogenous to the real society and its given historical situation. [↑](#footnote-ref-4)
5. The concept of "the principal" used here is a part of the economic theory of management, governance and property rights (see J. Pratt and R. Zeckhauser, eds. (1985): Principals and Agents: The Structure of Business. Boston, Harvard University Press or J. S. Grossman and O. Hart (1983): An analysis of the Principal-Agent Problem. Econometrica, Vol. 51, p. 7-46). The principal represents the owner, the employer or the natural leader. He/she has certain authentic objectives of management based on property rights. In religions, the authentic principal is the God asserting his/her commandments. However, it is presumed that the principal can control his/her imperium more effectively through a hired agent and not directly. Th agent can be e.g. the manager or the Pope. But the agent has also objectives of his/her own, which may differ from those of the principal. The problem turns at constructing such incentive schemes that would get the agent to behave at least partly according to the principal's interests. The actions of the agents may not be observable and the agent becomes the winner. The authentic objectives of the principal thus fail. [↑](#footnote-ref-5)
6. I.e. the dogma about the infallibility of the Authority or divesting a collective body (e.g. the State) with an a priory right of command over the rights of individuals. [↑](#footnote-ref-6)
7. The Structure of Scientific Revolutions, University of Chicago Press, 1962. [↑](#footnote-ref-7)
8. M. Friedman: Essays in Positive Economics. Chicago, Univ. of Chicago Press, 1966, especially pp. 3-16, 30-43. Originally published in 1953 under the same heading. [↑](#footnote-ref-8)
9. See J. Robinson: Economic Philosophy, Penguin, Harmondworth, 1962. [↑](#footnote-ref-9)
10. This is the Hume's law: the thesis that a normative, ethical or judgmental conclusion cannot be inferred from purely descriptive factual statements. [↑](#footnote-ref-10)
11. Remark of VB-editor: The list is much longer. It should include at least also Pareto, Arrow, Samuelson, Debreu, von Neumann, Hotelling, Frish or Nash. [↑](#footnote-ref-11)