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Terje Andreas Tonsberg
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Understanding Leadership in Complex Systems

A Praxeological Perspective

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Understanding Complex Systems

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Notes to Reader on Conventions and Terms

- Action: By the term "action" human purposeful action is meant, unless otherwise indicated.
- Whenever the name "Mises" is mentioned, the person referred to is Ludwig von Mises.
- The term "social facts" are used to mean facts that result from human action, such as institutions and markets.
- Names of fields of study and sciences such as economics and physics are not capitalized.
- The term "good" is used to refer to both goods and services as well as anything a human being considers useful, including ideas, actions and institutions.
- The term "a priori statement" has been used to refer to a proposition or assumption that is accepted a priori.
- The terms "a priori statement" and axiom have been used as synonyms.
- The term "satisfaction" has been used interchangeably with the concept of removal of felt uneasiness that is used by Mises. It does not just mean pleasure in the conventional hedonistic sense, but anything that a man considers desirable according to his values.
- The term entrepreneurship refers to human action from the viewpoint of uncertainty, and is not specific to any particular type of action, such as starting a business project.
- Squared brackets (like these) signify additions made by the author when quoting others.
- The terms man and men in the masculine form has been used to refer to both genders in this document in consistency with the style of Mises.

Preface

The attempt of social science to emulate the natural as well as the pure and applied sciences has had unimpressive results. Indeed, notable physicist Richard Feynman is on record calling social science "a science which is not a science… they follow the forms… but they don't get any laws" (Feynman 1981). One way of dealing with this situation is to adhere to the same approach in the hope that things will improve. A different approach is to take a step back and see if there may be a different way by analyzing how natural and social sciences are different. This is the attempt of the work at hand.

This book proposes that social science differs from the natural sciences in a fundamental way, namely, by involving the phenomenon of choice. Moreover, it suggests that a useful means for dealing with this phenomenon is the general theory of human action of Praxeology. This meta-theoretical framework helps us to *understand* how a complex social system may work and what the limitations of empirical research are in contributing to this understanding.

To demonstrate its usage we have chosen the field of leadership. We hope to provide a meta-theoretical guide and illustrate how various theories related to leadership fit the conceptual framework of Praxeology. We propose that Praxeology brings a framework forward that captures a very broad range of phenomena and theories, and brings a novel viewpoint of understanding.

Up to this point Praxeology has been largely restricted in application to Austrian Economics. This has limited the appeal of Praxeology to other fields of inquiry. The main premise of the book is that Praxeology is not a theoretical framework solely for the domain of economics. It is a framework of social science based on a pure theory of choice, that being Menger's Subjective Theory of Value. Our goal for the book builds on the original perspective of Mises that Praxeology provides a generalized structure which researchers may use in developing applied models and frameworks for the social sciences. We look forward to other researchers bringing the structure into new fields of inquiry in an attempt to develop more robust applied models.

Zug, Switzerland

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Part I
The Subjective Theory of Value and Praxeology

Carl Menger is widely regarded as one of the three inventors of the Subjective Theory of Value (STV) along with Jevons and Walras (Neck 2014). Nevertheless, Menger's view and elaboration of the theory was unique and his work led him to found the Austrian School of Economics and away from the mainstream neoclassical approach (Boettke 2010, bk. xi). However, it was Ludwig von Mises that would elaborate and expand upon the STV in an even farther reaching manner. He saw the STV as a foundation not only for economics but for a general theory of purposeful human action, or as he called it: Praxeology. Its aim was to understand action as a process of choice or exchange[1] under uncertainty based on a research method of a priori theorizing and methodological individualism.[2]

However, no significant systematic attempts have been made to take Praxeology beyond the field of economic theory, even by Mises himself.[3] Accordingly, our work represents a methodical effort to fill this gap by transferring this general theory of human action to the field of leadership. By doing this, we also hope to clarify the path for applying Praxeology as a general and integrative framework for the social sciences. However, first we need to briefly address the questions of what Menger's STV is, how Mises refined it to become Praxeology, and how it could contribute to leadership theory.

[1]Choice and exchange are the same phenomena under the STV, because personal choice implies sacrifice of alternative courses of action.

[2]I.e. based on individual action or choice as a micro foundation for theory.

[3]As shall be discussed below.

Chapter 1
Menger's Subjective Theory of Value: Choice Under Uncertainty

In contrast to classical price theories, the STV proposed that goods have no intrinsic value whatsoever. More importantly, it unified the notion of value in a single concept. This was that all choices are made based on subjective values associated with any perceived alternatives

> The value an economizing individual attributes to a good is equal to the importance of the particular satisfaction that depends on his command of the good…. The determining factor in the value of a good, then, is neither the quantity of labor or other goods necessary for its production nor the quantity necessary for its reproduction, but rather the magnitude of importance of those satisfactions with respect to which we are conscious of being dependent on command of the good. This principle of value determination is universally valid, and no exception to it can be found in human economy. (Menger 2007, pp. 146–147)

Accordingly, Menger argued that the unit of analysis in Economics is man's act of choosing or exchange based on subjective preference rankings of alternative courses of action.

However, Menger also saw another concept as important and inseparable from the STV. This was the idea of uncertainty and consequent error in human action. In other words, the STV's subjective preference rankings were not to be understood as cardinal and stable scales to which calculus could meaningfully be applied. Rather, they were to be understood as ordinal and highly transient phenomena shaped by a complex world of lacking information, mistakes, disequilibrium, and uncertainty. As such, it was an original contribution to the marginalist revolution in economic analysis that was otherwise idealized in mathematical form (Jaffe 1976).

Indeed, Menger (2007, p. 148) saw error as being "inseparable from all human knowledge" and, thus, changes in knowledge as fundamental parts of the market process. On the one hand, there are error prone consumers, continuously correcting their estimates of their own needs, what would satisfy them, and the value of that satisfaction. On the other hand, there are error prone entrepreneurs seeking information about the market, performing economic calculations and carrying

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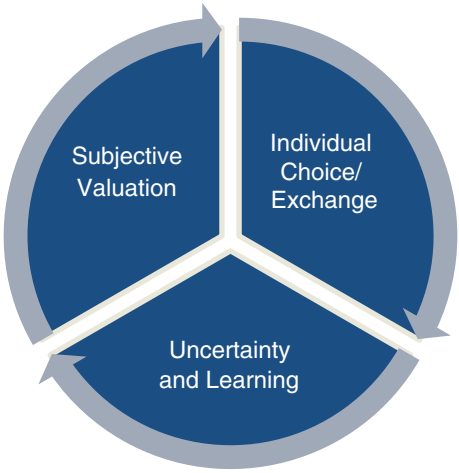

Fig. 1.1 The process of human action in Menger's work on the STV. *Source* Tonsberg (2015)

out business plans accordingly. Correcting error is, henceforth, of fundamental importance to social welfare and Menger held that "the degree of economic progress of mankind will still, in future epochs, be commensurate with the degree of progress of human knowledge " (Menger 2007, p. 74).

In this manner, Menger laid the basis for a paradigm that focused on the process of *human* action and learning under uncertainty in the market, rather than states of competition or equilibrium, as illustrated in Fig. 1.1.

These ideas connected to the STV were further developed by other Austrians like Schumpeter (1950, pp. 81–86) in his notion of creative destruction, Mises (1996) in his work on the process of human action in the market and von Hayek (1937) in his work on knowledge and discovery processes.

Chapter 2
Mises' Praxeology

Mises saw Menger's work on the STV[1] as revolutionary, because prior to its discovery economics was restricted to being a theory of wealth, selfishness, and the profit motive (Mises 1996, pp. 2–3). He was also profoundly influenced by it and became one of Menger's most prominent intellectual descendants with students like Friedrich von Hayek, Israel Kirzner, Alfred Schutz, and Murray Rothbard (Ebenstein 2003, p. 24; Eberle 2009). However, he also set out to establish greater methodological clarity for

[1]The STV may seem intuitively obvious once explained and is in principle accepted by all mainstream economists since it serves as the most fundamental assumption for utility theory. However, it should be mentioned that there was previously considerable confusion as to which idea of value would be relevant to economics (Smart 1931, p. 1). For example, in "The Wealth of Nations" of Smith (2009, pp. 20–21) one finds him defining the value of a good in terms of the utility (usefulness) of the object, the purchasing power it provides for other goods, or the toil and trouble it can save or buy. Marx (1959) expanded upon the latter idea and held that a "useful article… has value only because human labour in the abstract has been embodied or materialised in it".

However, the concepts of value as usefulness or purchasing power do not explain, e.g., why water has little exchange value compared to diamonds (Smith 2009, pp. 20–21). Moreover, a theory based on embodied labour was also found by some to have problems. E.g., Bastiat stated: "We can give the general name of obstacle to everything that, coming between our wants and our satisfactions, calls forth our efforts. The interrelations of these four elements—want, obstacle, effort, satisfaction—are perfectly evident and understandable in the case of man in a state of isolation. Never, never in the world, would it occur to us to say: "It is too bad that Robinson Crusoe does not encounter more obstacles; for, in that case, he would have more outlets for his efforts; he would be richer…lt is too bad that the sea has cast up on the shore of the Isle of Despair useful articles, boards, provisions, arms, books: for it deprives Robinson Crusoe of an outlet for his efforts; he is poorer… It is too bad that Robinson Crusoe has invented nets to catch fish or game; for it lessens by that much the efforts he exerts for a given result; he is less rich" (Bastiat 2001, p. 96). These were points well made, but the solution to the problem of defining economic value in a unified manner was still missing.

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the Austrian School (Mises 2002, p. 18).[2] That is, to clarify the methodology of Economics as a study of Human Action, i.e., as a process of exchange under uncertainty. It was this effort that culminated in proposing his Praxeology as a methodology distinct from the other methods commonly associated with sociology, such as positivism and historicism (Mises 2002, p. lxviii).

Mises' work on methodology was a reaction to the debate concerning what would be the appropriate scientific approach of economics. In other words, the dispute of whether Economics was an empirical science like physics, or merely a branch of history without the possibility of discovering economic laws (Mises 1984). However, Mises' contribution of Praxeology was a controversial response, for it proposed an approach founded on a priori statements regarding purposeful choice; the *categories of human action*. Mises had come to this because he had observed that Menger's theory implied that economics is not fundamentally about objects behaving with constant regularity, or about the psychological content of people's wants or decision making, or even something without regularity altogether. Rather, it was a science based on ends and means, and their implied meanings; about *thought and its manifestation in action,* as had been pointed to by Max Weber

> The theory of marginal utility, and every other subjective value theory, are not psychologically, but, if one wants a methodological term, 'pragmatically' based, i.e. they involve the use of the categories 'ends' and 'means.' (Lachmann 1976)[3]

Accordingly, Praxeology was founded on the implication of ends and means, namely, conscious action involving a chosen purpose, as opposed to sleep walking or action that is purely reflexive, such as a knee jerk. However, to Mises this was more than merely a good place to start one's analysis. Rather, it was an *a priori* category or axiom in the sense that it is "a self-evident truth… the cognition of the fact that there is such a thing as consciously aiming at ends" (Mises 1962, pp. 6–7).

[2]Economics of course is only a part of Praxeology and its scope of study is mainly "the analysis of the determination of money prices of goods and services exchanged on the market" (Mises 1996, p. 234).

[3]Translation by Lachmann (1976) of Max Weber's 1909 essay, "Die Grenznutzlehre und das psychophysis-che Grundgesetz".

Chapter 3
Mises' Apriorism

Hence, the most fundamental and most distinguishing idea in Mises' clarification of the methodology of economics is the elucidation of its a priori foundation. He proposed that theoretical reasoning in Praxeology starts not at an arbitrary point but with self-evident axioms regarding the nature of choosing as understood through the STV (Mises 1962, pp. 4–5). In other words, the subjective theory of value leads to the deduction of several a priori categories and based on these one deduces theorems. Any praxeological theory must recognize these categories because they are known aspects of all purposeful human action. Mises summarized this system of a priori concepts as follows:

> The very category or concept of action comprehends the concepts of means and ends, of preferring and putting aside, viz., of valuing, of success and failure, of profit and loss, of costs. As no action could be devised and ventured upon without definite ideas about the relation of cause and effect, teleology presupposes causality…. We cannot think of an acting being that would not in concreto distinguish what is end and what is means, what is success and what is failure, what he likes more and what he likes less, what is his profit or his loss derived from the action and what his costs are… (Mises 1962, pp. 8–9)

Very importantly, Mises pointed out that uncertainty is not merely an assumption of the STV. Rather, it is a category of action, because if one knew the future, one "would not have to choose and would not act," but merely react without will (Mises 1996, p. 105). In this way, Mises made Menger's emphasis on human error inseparable from the STV, because it is implied in choosing based on preference.

Accordingly, from the starting point of a priori propositions Praxeology is a way "to trace back all theorems to their unquestionable and certain ultimate basis, the category of human action, and to test by the most careful scrutiny all assumptions and inferences leading from this basis to the theorem under examination" (Mises 1996, p. 68). For example, whenever a person chooses one thing over another, he foregoes the other, and that which is foregone represents the psychic opportunity cost of the choice of action; a form of exchange. Accordingly, psychic profit or loss becomes the difference between what was foregone and what was

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actually gained. On the other hand, the means an actor possesses for reducing felt uneasiness becomes his capital (Mises 1996, p. 636, 2007, p. 210). In this way, the fundamental concepts employed in economics, such as cost, profit and loss, are derivable from the category of action, the notion that men employ means to reduce psychic felt uneasiness, via the STV. Moreover, theorems such as the law of marginal utility[1] is derived from the category of action, as it is simply "the reverse of the statement that what satisfies more is preferred to what gives smaller satisfaction" (Mises 1996, p. 124); i.e., it comes from the *a priori* of preference implied in action and is as such explained by the STV.

However, although Praxeology is based on meanings implied by action, it is not psychology in the sense of being concerned with causal explanations of personal value systems or psychological forces. For example, it is not concerned with why a particular person likes business profit more than family life, or vice versa. Rather, it begins where psychological studies leave off, namely at "the psychic events that result in action" (Mises 2002, P. 3). As such, it is both a tool for building theorems that offer interpretation of historical events and for forming expectations about effects of particular kinds of action (Mises 2007, p. 309). An example of a praxeological theorem would be that price fixing at lower than market price for good *A* will lead to shortages and queuing, because at the lower price more people will choose to acquire the good *A* than what is available. This proposition serves to predict what price fixing will lead to in the future, but also explains what happened historically when there is price fixing, such as in the former Soviet Union.

[1]The law of marginal utility holds that the value of a unit of a particular good depends on the incremental (marginal) impairment of well-being its loss would cause. This is according to the belief of the actor in a particular situation in time and space. I.e. it does not depend on the value of the entire class of that good, but the marginal employment and utility of that good, everything else equal. This is why gold is more expensive than water; as units are added of a good, each subsequent unit is allocated for a less urgent employment (Mises 1996, pp. 119–127). E.g. at a certain level of water scarcity and thirst a person may be willing to pay more for a glass of water than a handful of gold, but if there is plenty of water and no thirst this will not normally be the case.

Chapter 4
The Universality of Praxeology

According to the above, the STV forms a qualitative, a priori meta-theory of purposeful human action based on its implied *c*ategories of means and ends, preference, and so on. However, it also stresses the individual and subjective nature of choice. Hence, the STV implies three major methodological components as illustrated in Fig. 4.1.

In this way, Praxeology forms an overarching framework similar to the evolutionary approach in biology or atomism in chemistry under which more detailed theories can be organized. The purpose of the framework is to study human action under uncertainty, as illustrated in Fig. 4.2.

Indeed, Mises' Praxeology made Austrian Economics achieve in the words of Lachmann (1976) "a level of methodological self-awareness it had never previously enjoyed". However, it also showed that the STV had made economics a part of the study of purposeful human action in general, united by the factor of choice. After all, value judgments are made not only for tangible goods, but all that humans strive for. Mises (1996, p. 3) explains

> The modern theory of value widens the scientific horizon and enlarges the field of economic studies. Out of the political economy of the classical school emerges the general theory of human action, Praxeology. The economic or catallactic[1] problems are embedded in a more general science, and can no longer be severed from this connection. No treatment of economic problems proper can avoid starting from acts of choice; economics becomes a part, although the hitherto best elaborated part, of a more universal science, Praxeology.

Hence, when Mises speaks of economics, he is really speaking of Praxeology in the special case where monetary calculation is involved (Mises 1996, p. 234). He is not suggesting "economic imperialism", but rather the contrary, namely, that

[1]This is the term for economics used by Mises.

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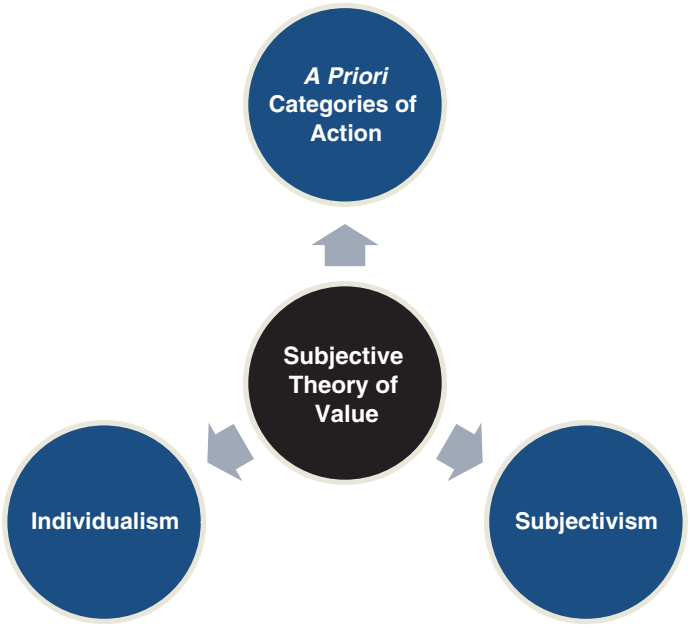

Fig. 4.1 The methodological implications of the subjective theory of value. *Source* Tonsberg (2015)

economics subjugates to Praxeology. That is, "a general theory of all choices made by acting men, a general theory of every kind of human action" (Mises 1990c, p. 42).

Accordingly, Praxeology was proposed to provide a more systematic and sound approach to the study of action and social phenomena than that commonly pursued (von Hayek 1942; Mises 1996, p. 185; Schuetz 1943). Given the unabating interest in Austrian Economics and Mises, as illustrated in the bibliometric results in the table below, one would expect there to have been many attempts at bringing Misesian Praxeology to several fields of research other than Economics (Table 4.1).

Yet, in spite of the impact of Mises' ideas in economics and political philosophy, his methodology has not been adopted explicitly to a notable degree in any other field of social science. For example, he appears to be relatively unknown to sociologists, as he is neither mentioned in the Cambridge Dictionary of Sociology under action theory, nor in Talcott Parsons' work on continental-based action theory, nor in the action theory oriented "Handbook of Analytical Sociology" (Hedstrom and Bearman 2009a; Macy 2006; Parsons 1949).

There are many possible explanations for this lack of application in other fields than Mises' own specialty of economics (Rothbard 1976). One is the widespread perception of Mises as a dogmatic, uncompromising and somewhat idiosyncratic classical liberal. This was to the extent of allegedly having called the likes of Friedrich von Hayek, Frank Knight, Henry Hazlitt, Milton Friedman, and

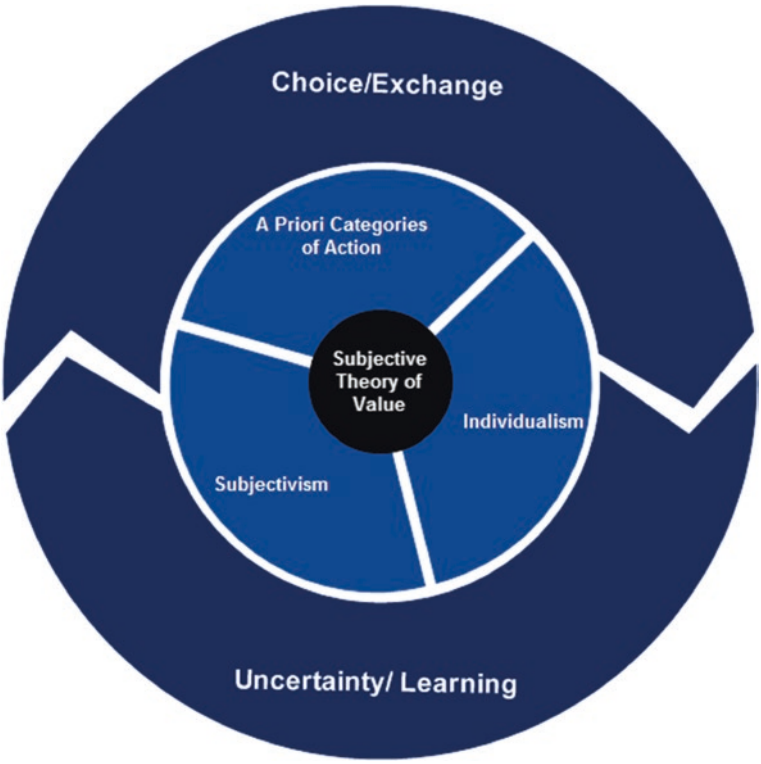

Fig. 4.2 The paradigm of Praxeology for understanding human action under uncertainty. *Source* Tonsberg (2015)

Table 4.1 Google Scholar search results for terms related to praxeology and leadership theory

Publication year filter on search	No. of results for "Austrian Economics"	No. of hits "Austrian Economics" and Mises
2014	1340	599
2013	1280	541
2012	1230	535
2011	1240	567
2010	1160	526
2009	1050	436
2008	921	403
2007	838	359
2006	740	340
2005	713	356
2004	675	344

Source Tonsberg (2015), as extracted on February 15, 2015

Lionel Robbins "a bunch of socialists" (Milton Friedman 1991). A related reason is that his methodology went against a tidal wave of methodological monism and modern mathematical economics and was dismissed as outdated or unscientific "extreme" apriorism that absolutely dismissed empirical methods (Skousen 2001, p. 313). Moreover, much of Mises' writing makes the impression that his concept of human action addresses mainly choices that involve major change and careful decision making, a relatively minor component of human action, as compared to more "irrational" or automated behavior. A further contributing factor to the lackluster spread of Praxeology may be that Mises did not provide obvious guidelines for how his method should be applied to domains other than economics (Gunning 2009b).

However, the underlying premise of this book is that praxeology with its associated STV may actually offer a rich meta-theory for the scientific study of human action "irrespective of all environmental, accidental, and individual circumstances of the concrete acts" (Mises 1996, p. 32). Accordingly, this work attempts to clarify the general methodology of Praxeology and makes a case for the scientific status of its apriorism and scientific dualism based on the peculiarities of social science. Sometimes this involves proposing particular interpretations or clarifications of the words of Mises. However, it also includes expansions or additions to his ideas to provide a richer and more flexible framework.

Chapter 5
Praxeology and Leadership

At the final stage of the discussion, an attempt will be made to apply this framework to the field of leadership as a theoretical experiment. This serves as a case in point to show how the principles of praxeology can be applied to other than Economics.

Moreover, it is believed that applying Mises' Praxeology to the domain of leadership has yet to be done. In fact, a bibliometric analysis supports this claim as illustrated in the Table 5.1

It can be seen from the table that results were few enough to verify that none of them presents a theory of leadership based on Misesian Praxeology.

Further to this, leadership is an area that can be seen as having considerable potential impact on society. For example, Tepper et al. (2006) estimated that one element of bad leadership, namely, abusive supervision costs US employers around $23.8 billion annually in terms of absenteeism, turnover, legal costs, reduced productivity, and other damaging effects. In another study considering a variety of anti-organization and anti-subordinate behaviors for a representative sample of 4500 Norwegian employees, more than 30 % reported to have been exposed to consistent and frequent destructive leadership practices from immediate supervisors (Aasland et al. 2009).

Yet, leadership is a field where according to Yukl (2010, p. 508) progress based on research "has been slower than expected from the large volume of publications and the immense amount of effort expended". It is also a field of social science where some scholars are increasingly looking for a more universal theory than what has been developed thus far (Chemers 2000; Wren 2007). One reason for the lack of a unifying theory is that "leaders" perform a variety of functions. For example, Yukl (2010, p. 507) listed 10 functions commonly performed by leaders

1. Help interpret the meaning of events;
2. Establish alignment on objectives and strategies;
3. Build task commitment and optimism;
4. Build mutual trust and cooperation;

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Table 5.1 Google Scholar search results for terms related to praxeology and leadership theory

Search #	Search term	Number of results
3	Praxeology "leadership theory"	12
4	Praxeology Mises "leadership theory"	2
5	Praxeology "leadership action"	3
6	Praxeology Mises "leadership action"	1
7	Praxeology Mises "leader action"	0
8	Praxeology "leadership behavior"	11
9	Praxeology Mises "leadership behavior"	2
10	Praxeology "leadership style"	28
12	Praxeology Mises "leadership style"	5
13	Praxeology "leadership style" "leadership behavior" Mises	2

Source Tonsberg (2015), as extracted on February 13, 2015

5. Strengthen collective identity;
6. Organize and coordinate activities;
7. Encourage and facilitate collective learning;
8. Obtain necessary resources and support;
9. Develop and empower people;
10. Promote social justice and morality.

Based on such functional paradigms, one may consider many different factors as significant depending on the situation and research interest. For example, to perform the 10 functions mentioned, the desirable leader skills or traits may be claimed to vary according to a number of situational variables

- Level in hierarchy [e.g., senior positions need greater strategic skills (Mumford et al. 2003)]
- Type of position (House et al. 2004)
- Type of decision (Vroom and Yetton 1973)
- Type of task (House 1971)
- Cultural setting (Fu et al. 2004; House et al. 2002)
- Skills and motivation of subordinates (Blanchard et al. 1993)
- Direction of influence [subordinate, peer, superior (Chaturvedi and Srivastava 2014; Yukl and Falbe 1990)].

Accordingly, if one was attempting a natural science approach to identify types of leaders or leadership behavior, one could from the above lists of functions and situational variables quickly identify a large number. However, one may also wonder if functions like "helping to interpret the meaning of an event" is really part of the same thing as "promoting social justice and morality". In any case, a unifying theory becomes difficult to discover among such a large number of variables and considerations. In fact, Mumford (2011) went so far as to declare that "the day of the global theory for leader success is over." Indeed, the diversity of functions listed above may even raise the question of whether a leader is meaningfully seen as an object with a particular set of observable behaviors, and this makes finding a unifying theory difficult.

Chapter 6
Leadership as a Process of Exchange Under Uncertainty

In contrast, an approach based on Praxeology would derive a general theory of leadership through a focus on the unifying element of the purposeful human act. This may be a worthwhile perspective, because the alleged functions of leadership mentioned previously, like "helping to interpret the meaning of an event" and "promoting social justice and morality" are really purposes for action. However, such an approach would not be based on an analogy to the natural sciences. Rather, its foundation is what distinguishes human beings from unconscious objects

> The characteristic feature of man is action. Man aims at changing some of the conditions of his environment in order to substitute a state of affairs that suits him better for another state that suits him less. All manifestations of life and behavior with regard to which man differs from all other beings and things known to him are instances of action and can be dealt with only from what we may call an activistic point of view. The study of man, as far as it is not biology, begins and ends with the study of human action. (Mises 1962, p. 34)

Accordingly, as far as leadership is a purposeful action it could be studied from such an activistic perspective. In other words, it could be approached as a process of human action and understood through Praxeology, as illustrated in Fig. 6.1.

To clarify, let it be assumed that an *individual* "A" wants to lead another "B" towards a certain purpose by engaging him in action X. In such a case, the STV paradigm dictates that B will only comply with an encouragement from A to take action X if he *subjectively* evaluates X as the best or least worst alternative. He *exchanges* it for the alternative of not complying. On the other hand, A also chooses to instigate X over alternative action. For example, attempting to engage B in X may be to sacrifice engaging him in something else.

In addition, since A and B are acting under *uncertainty*, they need to consider the potential future consequences of their chosen course of action. Moreover, they go through a *learning* process over time that may include various evolutionary

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Fig. 6.1 The paradigm of praxeology for understanding leadership as a process of human action under uncertainty. *Source* Tonsberg (2015)

amendments in terms of habit building, imitation, and innovation. The details of this process of learning and exchange in human action are approached praxeologically by first elucidating all of the *categories of leadership action* that can be conceived of a priori. These categories are then used in combination with various assumptions to gain a greater understanding of leadership.

An implication of this approach is that the concern with the role of "the leader" and "the follower" disappears. Instead, there is a stream of instigation messages and compliance choices between agents that may potentially change in direction and content at any time. *Everyone becomes an entrepreneur seeking to exchange less-preferred courses of action with those that are seen as preferable at the time.* Indeed, as will be discussed in Part 3, in Praxeology every human actor is an entrepreneur because entrepreneurship is defined as human action from the viewpoint of uncertainty.

In this way, it may be argued that the application of Praxeology to leadership sheds light on why a universal theory of leadership continues to elude researchers; a leader is an ideal type,[1] a simplification of convention for communicative convenience that is in itself loaded with theory; leaders are not strictly speaking real objects. Hence, leaders cannot be approached like objects in physics or chemistry. Rather, leaders are human actors and leadership is an action involving subjective valuation of alternatives under uncertainty. Therefore, it may be more suitable to consider the object of study to be the process or mechanism of human action in the form of leadership.

This means that an elucidation of all the implied categories of leadership action in praxeological manner may be capable of providing a general framework that connects to the main parameters of existing leadership theories. Thus, it is hoped that the discussion at hand may provide at least a fresh perspective to the field of leadership study and fill a present gap in the knowledge base. It may even be that it could serve as a basis to evaluate whether a particular leadership action is the most effective in reaching stated goals according to given criteria.

In light of the above, the proposed framework aims to be *adequate*, i.e., reasonable and understandable to both actors and praxeologists (Schuetz 1943). This being the case, praxeological theory building is similar in kind to the method of daily decision making, just as empirical methods are similar to how one learns from daily experience. However, as a method of science it attempts to employ greater precision, caution, and skill (Mises 1996, p. 58). Moreover, the framework does not aim to be a complete representation of reality or cover all aspects of leadership, due to the enormous complexity of human action in a social setting. Rather, the purpose is to demonstrate its capability in developing adequate qualitative theory and to elaborate on some of the major topics that the categories of action raise regarding leadership. Indeed, the power of the method can be seen in that its procedure naturally branches out to facilitate understanding of a broad selection of processes.

[1]Due to the high level of complexity social science employs simplified ideal type classes to imply "some proposition concerning valuing and acting" (Mises 2007, p. 315). They often generalize for a group of people how they commonly value and act, or influence valuing and acting, and how strong the underlying ideology is, and are as such not equivalent to real types like organizational membership. They are employed both for the purpose of explaining past events and for forecasting. As Mises (1996, p. 60) points out, even when dealing with a single event or person one needs to employ ideal types, such as commander, dictator, revolutionary leader, revolution, disintegration of an established regime, anarchy, and so on. Even at a personal level one employs types constantly to interpret and organize activities related to people and institutions. For example, one categorizes in terms of intimate friends, people of interest, mere performers of a typical function in one's life, like the clerk at the local grocery store, and so on. Thusly, humans organize their world "within the framework of the categories of familiarity and strangeness, of personality and type, of intimacy and anonymity" (Schuetz 1943).

Chapter 7
Discussion Scope and Outline

In order to show the benefits and practical use of Praxeology in general as well as how it may be applied to leadership in particular there are several requirements. These include elucidating the principles, concepts and practical procedure of Praxeology along with their rationale and clarifying issues that may have been subject to misinterpretation. In this regard, one needs in particular to show that the praxeological approach to human science was adopted to suit the complex nature of social facts and human action. In other words, its emphasis on a priori categories, or axioms of action is based on a pragmatic paradigm, and does not reflect a "hard" apriorism in staunch opposition to empirical methods.

Yet, it will not be claimed that Praxeology is appropriate as it is for any area of social science. Rather, it will be argued that some improvements can be made to enrich the original framework proposed by Mises. These are introduced before the application of Praxeology to leadership is presented. First, during the presentation of the categories of human action, a new category of action cues will be introduced to account for the habitual aspect of behavior. Second, an explicit argument for the importance of empirical data, and the criteria for its use will be presented. Third, a more elaborated a priori concept of change agency or entrepreneurship will be proposed by integrating elements of evolution theory. These improvements will hopefully show how Praxeology as an approach to systems thinking is both robust and yet flexible enough to accommodate or even enrich modern social science.

In light of the above, to proceed from the principles of Praxeology to an application to leadership theory, this discussion will proceed from logical foundations to application through the following sequence of tasks:

1. Clarifying and discussing Mises' apriorism in terms of his epistemological foundations and criteria for accepting a priori statements in Praxeology;
2. Discussing Mises' methodological principles with regard to empirical data in terms of methodological subjectivism, individualism and dualism. The purpose is to expose the rationale for approaching social science in a way that differs

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from the methodology of the "hard" sciences and to show what it entails in terms of broad working principles. Moreover, it will be proposed how Praxeology may accommodate or complement empirical studies to a greater extent than perhaps previously thought. That is, although Praxeology is firmly founded in subjectivism[1] and many believe that Mises was against empirical research,[2] it may actually be integrated with quantitative and qualitative studies without losing its identity;

3. Elucidating the categories of action, i.e. the a priori propositions that are implied in human action. This is the foundational procedure of Praxeological methodology. However, the discourse will go beyond merely showing the categories Mises is known to have derived. Rather, an argument will be presented for the addition of another a priori category of action related to time: the category of *cues to action*. This is in an attempt to better account for the phenomena of automaticity in human action;
4. To show how Praxeology proceeds from the categories of action to building theorems through what Mises calls "imaginary constructions", and how he emphasizes clarifying the role of the entrepreneur, human action from the viewpoint of uncertainty. The general procedural comments provided by Mises along with his application to Economics are used to produce a guideline for how to apply Praxeology to other fields than economics;
5. To propose a more developed a priori conceptualization of the function of entrepreneurship, which is defined as human action under uncertainty. This will be done by integrating it with concepts from evolution theory related to imitation, innovation and learning;
6. To present a suggested broad framework for leadership study based on Praxeology. The purpose is to show how praxeological methodology can be used in this field and thereby also how it could be used in other areas. Hence, the discussion focuses on demonstrating how praxeological deductive procedures by their nature raise key issues of leadership and shows how one may begin to understand them with a praxeological paradigm.

The sequence of discussions described are divided into the following parts for greater clarity and logical flow of the argumentation:

1. *The principles and methods of Mises' Praxeology*: this part contains chapters discussing methodological apriorism, methodological dualism, the theory of human action and the procedural steps of Praxeology;
2. *Entrepreneurship, imitation and innovation*: This part proposes an expansion of the praxeological function of entrepreneurship in terms of imitation and innovation from an evolutionary learning perspective;
3. *The human action of leadership*: A suggested framework for the theory and study of leadership based on the Praxeology of Mises.

[1] In the sense of the study of ideas as objects.

[2] It will be argued that there is a misunderstanding surrounding this point.

We believe our application of Praxeology to leadership study provides a unique point of view and perspective for this field, just as the approach of Mises provided a unique point of view and perspective for the domain of economics. Moreover, since this work first clarifies the path for how Praxeology may be used to approach any field related to purposeful human action, we hope that it sets an example for further application in yet other fields of social science. As such, this work provides a unique perspective on how to combine a priori propositions, logical deduction, subjective interpretation, theoretical modeling (system's thinking), and empirical testing in a general theoretical framework of leadership, but also potentially in other fields of study.

Part II
The Principles and Methods of Mises' Praxeology

It has been mentioned that Mises presented Praxeology as the appropriate framework for the study of human action. Its starting point is conscious human action with all its implied categories, such as means and ends, preference, choice, subjective value and so on. These categories are by implication universal for all purposeful acts and in this sense axiomatic and a priori to the study of human purposeful action (Smith 1990).

However, this emphasis on a priori categories and the role of subjective ideas is controversial from an empirically inclined viewpoint. This is not the least due to the substantial success of empiricist approaches in the "hard" sciences and the desire to replicate this success in social science (Flyvbjerg 2001). Further, the controversy was not lessened by Mises himself, who at times made uncompromising and sweeping statements that do not seem to reflect the nuances of his position as articulated in his extensive writings. For example:

> …the ultimate yardstick of an economic theorem's correctness or incorrectness is solely reason unaided by experience.

It is perhaps a statement like this that made an outraged Friedman (1991) think that Mises holds that as humans "we have absolutely certain knowledge of the motivations of human action and … can derive substantive conclusions from that basic knowledge." Similarly, Samuelson (1972, p. 761) said in reflection on Mises' apriorism "I tremble for the reputation of my subject." Even O'Sullivan (1987, p. 158), who has called for a "moderate apriorism" for economics asserted that Mises was "perhaps the strongest proponent of all of extreme apriorism." In short, a number of scholars have objected to Mises' aprioristic approach to purposeful human action and to his economics (Caplan 2003; Oakley 1997; Radnitzky 1995).

In light of such objections, it is deemed necessary for this work to first present the apriorism of Praxeology as a worthwhile methodological alternative. Accordingly, it will be argued that his approach is better described as soft or

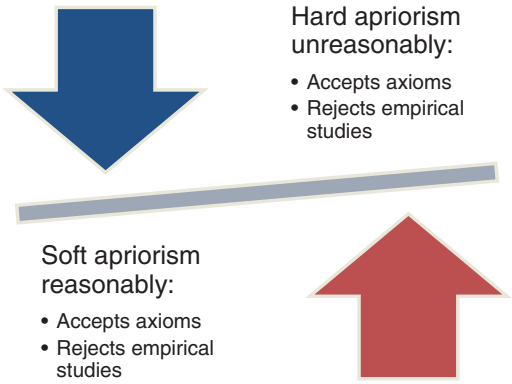

Fig. 1 Characteristics of soft and hard apriorism. *Source* Tonsberg 2015

pragmatic rather than as hard or extreme. This claim is based on the premise that a hard apriorism would meet the following two criteria related to its reasonability:

1. It assumes an unreasonable degree of knowledge a priori regarding the phenomena under study;
2. It rejects empirical data as useful for the support of theory when it is reasonably able to support it.

In contrast, a scientifically pragmatic or "soft" apriorism would accept a priori statements that are not highly controversial as well as empirical studies that provide sound support for theoretical propositions. The two opposing approaches of apriorism may be illustrated as shown in Fig. 1 in terms of the two criteria mentioned.

In order to argue that Mises' apriorism is soft and not hard it is required to address both of the reasonability criteria. With reference to the first criterion, the approach of Praxeology to a priori claims will be discoursed in terms of (a) the conditions for accepting a statement as axiomatic, and (b) the most basic epistemological a priori propositions that represent what Mises refers to as methodological apriorism, namely:

- the logical and praxeological structure of the mind, which includes:
  – the principle of non-contradiction,
  – the idea that purposeful action involves means and ends,
  – the implications of the means and ends of action;
- the power of the human senses;
- the regularity of nature;
- the finality of ends in purposeful human action.

The highlights of this part of the discourse are presented as an argument map in Fig. 2.

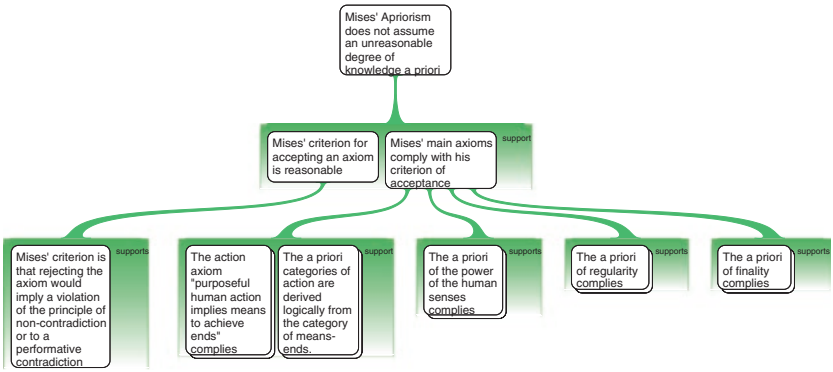

Fig. 2 High level structure of the argument that Praxeology does not unreasonably accept axioms. *Source* Tonsberg 2015. *Note* Green boxes signify supporting reasons to the boxes they are linked to above them in the hierarchy

Subsequent to this, the second reasonability criterion will be addressed through a discussion on Mises' methodological subjectivism, individualism, and dualism. These methodological concepts relate to his view that the facts of human action need to be approached differently from those of the natural sciences.

Chapter 8
Methodological Apriorism

8.1 The Criterion of Mises for Accepting a Statement A Priori

The nature of a priori propositions and knowledge is the subject of much philosophical debate (Lo and Mueller 2010; Russell 2011). However, the meaning for the purposes of this work is what is self-evidently known, or known by deduction from what is self-evidently known.[1] It is knowledge that is not in need of repeated experiences to be confirmed. In the words of Mises himself

> A characteristic mark of an a priori category is that any different assumption with regard to the topic concerned appears to the human mind as unthinkable and self-contradictory. (Mises 1962, p. 54)

Accordingly, Mises explains his concept of Methodological Apriorism, stating

> The fact that man does not have the creative power to imagine categories at variance with the fundamental logical relations and with the principles of causality and teleology[2] enjoins upon us what may be called methodological apriorism. (Mises 1996, p. 35)

From this, it can be affirmed that Mises criterion for the acceptance of an a priori assumption is that anything else would appear unthinkable and self-contradictory, i.e., in violation of the principle of noncontradiction. To establish whether this criterion is reasonable or not, two propositions need to be defended in what follows below. The first is that there is a need for a priori statements in the first place. The second is that Mises' criterion itself is reasonable in that it does not assume too much.

[1]As defined by Webster's dictionary "a priori" means: a: deductive b: relating to or derived by reasoning from self-evident propositions—compare a posteriori c: presupposed by experience (Merriam-Webster 2011).

[2]By teleology Mises means the end purpose of human conscious action, and is not referring to the notion of final causes in nature. This will be made clear in the below discussion on the a priori of final cause in action.

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8.1.1 The Need for A Priori Statements

The quest for truth is said to require a proof for every proposition, and it has been argued that it is the spirit of this notion that has been the driving force behind the amazing scientific advances in the West (Popper 1965). However, the dilemma is that if *all* knowledge depended on a proof then no knowledge would be possible and one would succumb to radical skepticism (Weinberg 2007). This is because such dependence would mean that to know "a" one would need some proof for it, being "b", but then "b" would also need a proof "c", and so on ad infinitum. This leads to a vicious infinite regress, which is impossible to conclude (Bergmann 2004; Fumerton 2010).

Accordingly, one either admits that some propositions are necessarily and self-evidently true, or succumbs to the wholesale denial of the existence of any knowledge at all (Gillett 2003; Smith 2011; Williamson 1997). It may thus be argued that there is a need for propositions that are taken for granted, accepted to begin with, or self-justified and hence known a priori (Gordon 1993; Smith 2011). After all, "from blank doubt, no argument can begin" (Russell 2001, p. 95).

However, it is important to note first that the need for a priori statements implies not only a need for an a priori statement like the principle on noncontradiction. It also implies with more specific relevance to the current discussion that any scientific methodology must ultimately obtain its own justification from a source external to it. This is because methods of scientific investigation are not self-justifying in the manner of the principle of noncontradiction. After all, the methods of science are not themselves concerned with the questions of the conditions of cognition, let alone the ultimate nature of things. These are rather questions of epistemology, ontology, and metaphysics which are areas of philosophy (O'Sullivan 1987, pp. 7–14). It is this field that attempts to carefully answer the ultimate questions of knowledge (Russell 2001, p. 4). In contrast, other fields of knowledge have certain assumptions that are not addressed as part of the field, such as the existence of cause. It is the task of philosophy to affirm or reject these assumptions through critical inquiry (Russell 2001, p. 95).

8.1.2 Establishing A Priori Claims

Aware of the need for a knowledge starting-point, Aristotle held that the most fundamental a priori is the principle of noncontradiction (Irwin 1989, pp. 179–180). He stated

> we have now posited that it is impossible for anything at the same time to be and not to be, and by this means have shown that this is the most indisputable of all principles. Some indeed demand that even this shall be demonstrated, but this they do through want of education, for not to know of what things one should demand demonstration, and of what one should not, argues want of education. For it is impossible that there should be demonstration of absolutely everything (there would be an infinite regress, so that there would still be no demonstration); but if there are things of which one should not demand demonstration, these persons could not say what principle they maintain to be more self-evident than the present one. (Aristotle n.d.-a, Sect. Book IV, Part 4)

In other words, to avoid vicious infinite regress in any quest for knowledge, one needs to accept at least one proposition a priori. Aristotle chose the principle of noncontradiction as the best candidate. After all, no truth claims would be possible otherwise, because a statement of the very same meaning could then be claimed to be both true and false. Hence, this principle is "naturally the starting-point even for all the other axioms" (Aristotle n.d.-a, Sect. Book IV, Part 3).

Moreover, the principle of noncontradiction allows one to reject performative contradictions like "self-contradictions are valid", or "there are no correct statements". This is important because what may be the strongest argument for the affirmation of an a priori fact is when denying it involves a performative contradiction in terms of words spoken or action taken. Examples would be denying the world's existence while planning for its provisions, or denying reason while engaging in a scientific debate, or denying a table's existence while eating at it. A famous example in this regard is Descartes' "I think, therefore I am". That is, since I think, I must exist, otherwise no thinking could take place, and one is not able to deny this, because denying it would necessarily involve thinking. An a priori can in this sense be considered a self-justifying axiom[3] and the problem of vicious infinite regress be avoided (Hoppe 1989, 1995; O'Sullivan 1987, pp. 12–13, 45; Rothbard 1957).

In contrast to the argument for the principle of noncontradiction as an a priori, some relativists hold that there are no absolute truths. This is clearly a selfcontradictory proposition as one cannot claim to know even this if there is no way to know anything. Moreover, one can ask the important question as to how can a relativist partake in scientific discourse, if there is no way to reach the truth about anything, even the criteria for evaluating an argument? (Hoppe 1989; O'Sullivan 1987, pp. 17–30)

As a counter argument to being accused of contradicting themselves, some relativists have stated that their stated principles are merely plausible opinions (O'Sullivan 1987, pp. 17–30). However, this only continues the contradiction of their position as one may ask one of them, "do you know that it is plausible?". If the answer is that he does not know, then there is nothing further to discuss. If the answer is that he does indeed know, then by which criteria does he know? The subject must then either concede to those criteria being known or end up again with nothing to discuss. No matter how the argument proceeds, it must eventually be based on some premise he claims to be known if it is going to make sense. His situation becomes similar to the one of a positivist who denies a priori knowledge in that he cannot provide empirical proof for this principle (Gordon 1993; Hoppe 1995; O'Sullivan 1987, p. 17).

In summary, denying that some proposition must be accepted a priori leads to bewildering situations of circular reasoning. Accordingly, it may be claimed that Mises' criterion for the acceptance of a priori statements, namely, that denying

[3]An axiom is self-evident when it must be used in order to be refuted. In the case of human action an individual who wishes to refute Praxeology must use purposeful means to a specific end which is the definition of Praxeology, i.e., self-evident (Henderson 2011).

them would imply self-contradiction, is indeed reasonable and does not reflect a dogmatic and hard position. It certainly does not involve assuming too much knowledge a priori, since the principle of noncontradiction is needed to establish any knowledge at all. Hence, accepting this criterion could at least be argued to be better than its alternative and certainly more pragmatic.

Accordingly, the important issue at this point is rather the specifics of Mises a priori claims related to "human action", namely, the notion that human beings engage in cognitive and physical activities with a purpose (Hülsmann 1999; Plauché 2006; Rothbard 1976). In particular, it remains to be discussed to what extent these a priori claims comply with the criterion of noncontradiction.

8.2 Mises' Two A Priori Principles of Cognition

In the above it has been argued that the most fundamental a priori of Mises' apriorism is the principle of noncontradiction. Indeed, Mises holds that the mind's logical structure begins with "the very clear distinction between A and non-A," for without it, one cannot distinguish between truth and falsehood (Mises 1962, p. 2). This principle along with the fundamental a priori propositions of logic and mathematics are prerequisites for the formation of knowledge. Indeed, such logical principles are said to be "innate ideas" that cannot be proved by experience "since all proof presupposes them" (Russell 2001, p. 47).

However, Mises goes beyond these purely logical principles and holds that in "epistemology, the theory of human knowledge," two principles must be considered permanent, namely

1. "the logical and Praxeology structure of the mind," i.e., thinking, along with
2. "the power of the human senses" i.e., sense perception (Mises 1962, p. 1).[4]

[4]It may be noteworthy that the notion of innate principles and ideas or a logical structure of the mind is commonly associated with rationalist philosophers, such as Descartes, Leibniz and Kant (Russell 2001, p. 47). It is Kant who is said to have been the main influence on Mises for his proposition that the mind has a mathematical and logical structure, and that natural science is possible through this structure along with sensory perception. Similarly to Mises, Kant states that logic is an a priori field of understanding and is necessary in order "to form a correct judgement with regard to the various branches of knowledge" (Kant 2010, p. 12). Mathematics, on the other hand is an a priori science by which one may arrive at knowledge through "positive a priori construction" such as "the properties of the isosceles triangle" (Kant 2010, p. 13). Finally, Kant like Mises holds that physics combines a priori reason with empirical knowledge since reason is a prerequisite for perceiving order in experience. He holds that scientists such as Galileo "… learned that reason only perceives that which it produces after its own design; that it must not be content to follow, as it were, in the leading-strings of nature, but must proceed in advance with principles of judgement according to unvarying laws, and compel nature to reply its questions" (Kant 2010, p. 14). Due to the similarity between the assertions of Kant and Mises regarding logic, mathematics and the natural sciences, Rothbard (1976) states that Mises was an "adherent of Kantian epistemology".

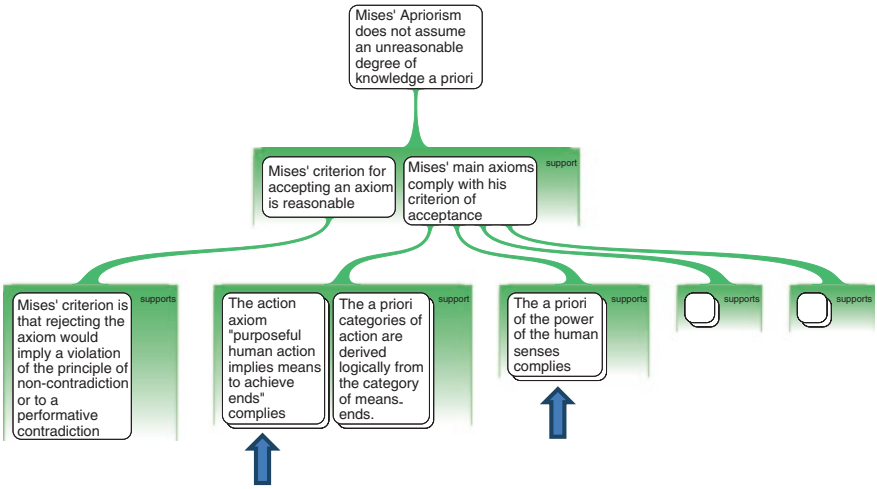

Fig. 8.1 The argument for the reasonability of the axioms of praxeology—the a priori praxeological structure of the mind and the principle of sense perception. *Source* Tonsberg (2015). *Note* Map nodes without text are introduced later due to space limitations. For a complete map with all nodes see p. 76

Accordingly, one has two epistemological "spheres" (Mises 1962, p. 115). That is, "the fundamental fact about the universe is that it is divided into two parts, res extensa, the hard facts of the external world, and res cogitans, man's power to think" (Mises 1962, p. 125).[5]

From the sphere of thinking one obtains the a priori sciences of "logic, mathematics, and Praxeology" which "aim at a knowledge unconditionally valid for all beings endowed with the logical structure of the human mind" (Mises 1996, p. 57). That is, the task in these sciences is to engage in "aprioristic reasoning" in order to show what is implied or not in a priori "categories, concepts, and premises" and thus "to render manifest and obvious what was hidden and unknown before" (Mises 1996, p. 38). On the other hand, through the sphere of the human senses one obtains the empirical sciences.

To Mises the structure of the mind has both a logical and a praxeological part as mentioned. The former is based on the a priori principle of noncontradiction which has already been discussed in terms of whether it reflects a soft or hard apriorism. Hence, the discussion that follows is reserved for the a priori praxeological structure of the mind and the principle of sense perception. The arguments presented are reflected in the argument map as shown in Fig. 8.1 in context of the overall claim that the apriorism of Praxeology is soft.

[5]Translated from Latin, "res extensa" means "extended thing" and is Descartes' term for corporeal substance. "Res cogitans" means in Latin "a thinking thing" and is Descartes' term for "thinking substance". This dichotomy is the basis for Descartes' dualism (Bunnin and Yu 2004).

8.2.1 The A Priori Praxeological Structure of the Mind

The praxeological structure of the mind[6] is a reference to the a priori of human action, i.e., cognitive and physical activities that have a purpose (Rothbard 1976). It holds that man engages in chosen acts because he expects that his choice can reduce some psychic felt uneasiness; to substitute situations less favorable for those he imagines as being more favorable (Rothbard 1951). This contention is as stated by Aristotle that "…mankind always act [*sic*] in order to obtain that which they think good". (Aristotle n.d.-b, Sect. I: 1) "Good" being interpreted here as "valued" without necessarily implying sensory pleasure, material gain, or ethical desirability, although it could involve any of these. In other words, whatever one engages in is what one preferred at the choice of engagement, even if it is the lesser of two evils.

It has previously been argued that Mises' criterion for accepting an a priori statement is that anything different appears unthinkable and self-contradictory to the mind. It has also been argued that such a criterion is reasonable and pragmatic. Accordingly, if the axioms of human action meet this criterion, then it may be claimed that the statements accepted a priori in Praxeology are those of a soft aprioriism. There are two main points that show this is indeed the case.

First, Mises holds that one cannot think of the purposeful actions of other human beings without referring to the a priori of deliberation involving means to achieve preferred ends. It is of course impossible to *prove* this in the objective empirical sense, because purpose is neither objectively observable, nor a logical necessity. Rather, it is something a normal human being considers obvious from his intimate knowledge of himself as a choosing actor. One cannot think of the purposeful actions of other human beings without referring to the means—ends dual as an a priori fact. In other words, one cannot think of a purposeful act without an answer to the question "Why are you doing it?"

Second, the means-ends category of human action is supported by the a priori principle of noncontradiction because attempting to deny this a priori is itself a human act. After all, it deliberately aims to remove uneasiness by the means of argumentation. Hence, an attempt to refute the statement that purposeful human action implies means and ends would entail a performance contradiction. Accordingly, the a priori of action is like a Cartesian "I think, therefore I am," that says, "I act with purpose, therefore I have preferences, means and ends in mind" (Gunning 1989). In this sense, experience "yields an immediate awareness of the law-governed character of our mind" (Husserl 2001, p. 54).

[6]It may be of interest to note also that the notion of a structure of the mind is supported by findings in psychology, particularly in the study of how humans acquire language, and their stunning ability to apply grammatical rules at a very young age (Chomsky 2000; Pinker 1995, pp. 262–296). This ability has been interpreted to mean that "the brain comes pre-equipped with circuitry ready to absorb the syntax of any language; initialization of the circuitry requires only exposure to talking to others to set the switches" (Smith 1999). If this is correct then it is all the more plausible to claim that the mind is quite literally structured with categories of logic and action. However, there is a dispute on whether there is a special instinct for language or if this is part of a more general faculty (Liu 2005).

It is from this a priori of the logic of means and ends qua human action that Mises derives the a priori categories that provide the foundation for his deductive methodology. These categories will be described in detail later. However, for the purpose of merely establishing their reasonableness as a priori statements an argument for them can be stated in brief. It begins by stating that in the study of action it is already known that the cause of purposeful action is *choice*. Choice implies *scarcity* in that one cannot have whatever one likes; there is a limited number of options. It also implies an *image of a better state* due to a reduced *psychic felt uneasiness* that reflects *speculation* on what will happen if one acts. Moreover, it implies *hope* that acting will make one better off or there would be no reason to act. *Felt uneasiness* also implies *values* and *preferences*; conscious choice cannot be without evaluating alternatives. Furthermore, *hope* necessarily involves expectations based on at least some level of perceived *regularity* in the world. In addition, choice implies that it is a *means*[7] to some valued ultimate *end* and that one is exchanging one imagined future state of affairs for the sacrifice of another; i.e., action implies *opportunity cost*. Moreover, it implies a sense of loss or gain when evaluating the end result of action. Finally, *time* is a necessary aspect of action since it aims at changing circumstances and therefore the notions of now and later. Similarly, experience implies *uncertainty* as one can never predict with absolute certainty what the future holds in terms of the consequences of one's actions (Gunning 1989; Hoppe 1995; Rothbard 1976).

The above a priori conception of purposeful human action ought not to be very controversial or considered as unreasonable. In fact, it is remarkably close to the one used in modern goal psychology even though it is a field of empirical science. For example, in the Handbook of Goal Psychology Moskowitz (2009) described the *requisite features of goal pursuit* as being

1. a discrepancy is experienced;
2. a tension state arises from detecting a discrepancy (psychological or physiological state);
3. tension that arises is aversive and unpleasant and goal striving arises to reduce the tension and eliminate the discrepancy;
4. feedback is needed regarding progress toward a goal, and rate of progress, it informs decisions, conscious or automated, regarding the kind, quality, quantity pace, or cessation of behavior;
5. if not satisfied, behavior continues and may be adjusted;
6. when the tension is satisfied, goal-relevant responding ends;
7. many possible subgoals may be able to reduce the tension;
8. several goals may satisfy the tension.

[7]The means to get to a certain level of ends may be of several levels. For example, harvesting is a means to flour which is a means to bread which is a means to satisfaction of hunger. However, this is subjective, because for another person participation in harvesting could be from a felt need to exercise.

Mises' conception is very close to the above and this supports the notion that his a priori of human action reflects a soft apriorism. In fact, in some ways Mises' categories provide more detail than the goal psychology model in that it includes e.g., expectations and values/needs, which are arguably universal categories of motivation theory. Hence, one may claim that Mises was actually a pioneer in his conception of action and that this may indeed have contributed to him being perceived as "extreme" in his apriorism. After all, when Mises wrote about human action, behaviorism and positivist empiricism were dominant paradigms of psychology.

8.2.2 The A Priori Power of the Human Senses

Mises' second sphere of epistemology refers to the natural sciences. These "aim at a cognition valid for all those beings which are not only endowed with the faculty of human reason but with human senses" as well (Mises 1996, p. 57). In other words, empirical knowledge is possible through the combination of sense perception and reason, whereas Praxeology is primarily based on reason.[8]

To establish that the principle of the power of the human senses is a reasonable epistemological a priori one may again argue based on the principle of non-contradiction. For example, Descartes' argument, "I think, therefore I am," implies a more basic, "I perceive, therefore I am". After all, the claim of perception of thinking is prerequisite to that of thinking itself. Hence, denying perception while affirming thinking involves a performative contradiction. Consequently, perceiving must be confirmed.

Expanding on this confirmation of perception along with thinking, an argument for the possibility of knowing the outside world based on purposeful human action is that one perceives sense impressions that are not like thinking. They are distinguished by more clearly not being subject to one's will. Mises states in this regard

> From the praxeological point of view it is not possible to question the real existence of matter, of physical objects and of the external world. Their reality is revealed by the fact that man is not omnipotent. There is in the world something that offers resistance to the realization of his wishes and desires. Any attempt to remove by a mere fiat what annoys him and to substitute a state of affairs that suits him better for a state of affairs that suits

[8]This segregation of Praxeology as the study of human action was hinted at as early as Aristotle. He pointed out that the principle of movement is in the doer or producer in the practical and productive sciences, unlike in the study of nature: "There is a science of nature, and evidently it must be different both from practical and from productive science. For in the case of productive science *the principle of movement is in the producer* and not in the product, and is either an art or some other faculty. And similarly in practical science the movement is not in the thing done, but rather in the doers." (Aristotle n.d.-a, Sect. XI: 7) (emphasis added). An example of a producer would be a potter who is both efficient and final cause in his work. That is, he would be the efficient cause of moving the clay so that it can hold water as a final cause (Miller 2011). Thus, the action or means of moving the clay for the purpose of holding water is conceived in the producer's mind. This is unlike the movement of objects, where movement is by a cause external to the object.

> him less is vain…. We may define the external world as the totality of all those things and events that determine the feasibility or unfeasibility, the success o[r] failure, of human action.[9] (Mises 1962, p. 6)

Indeed, the consequence of accepting extreme skepticism would be the end of human life; as discourse and action cease "men would remain in a total lethargy until their miserable lives came to an end through lack of food, drink and shelter" (Hume 2008, p. 8). Accordingly, Papineau stated that "sceptical arguments about [the existence of] trees and tables reflect back on our assumptions: since we obviously do know about tables, an argument that such knowledge is impossible challenges us to find the flaw in our reasoning" (Papineau 1996, p. 3).

Further to the defense of this position, it may be argued that denying the perception of other things than oneself involves a restrictive nihilism that, while it cannot be easily refuted by formal syllogisms, it is most satisfactorily handled with reference to shared perceptions. For example, one could say, "I will not continue this discussion with you until you admit that I exist and am engaged in a conversation with you". Accordingly, Bernard Russell asserts that the absolute denial or doubt regarding the existence of such things as tables or chairs is rare (Russell 2001, p. 9).

Of course, affirming sense perception and thinking as sources of knowledge about the outside world does not mean that all perception is sound, or that all thinking leads to valid conclusions. It simply means that these are the ultimate sources of valid cognition. It is by experience and talent that one is able to distinguish obviously valid cognition from cognitions that are invalid, doubtful, or patently false (Smith 1990). It is the role of science and philosophy to facilitate judgement for each particular case.

It has been shown how Mises holds that our senses provide data of experience from the real world outside our minds and intuitions provide data of reason (Bealer 2000). It is these data on which a posteriori and a priori knowledge would ultimately be based. This idea appears close to the proposition of Aristotle, which states that we have the innate potential to know things through our senses and to know the intuitive principle of noncontradiction (Smith 1994; Smith 2011). Whatever the nuances of Aristotle and Mises positions might be,[10] such a position ought not to be considered controversial and does not reflect a hard apriorism.

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[9]The original states "the success of failure", which is most likely a typo and has been corrected by the author to "or".

[10]This is also the position understood to be held by several Misesian scholars that are described as realists and apriorists (which again implies foundationalism and rationalism as opposed to empiricism) (Gordon 1993; Plauché 2006; Smith 1994; Yates 2005). Rothbard (1976) for one explicitly named himself "an Aristotelian and neo-Thomist" and held that the human mind apprehends the "laws of reality" through experiencing "the real world". However, this appears somewhat in contrast to Mises himself who is said to have a Kantian inclination by holding that the mind imposes a structure upon reality based on its a priori nature (Gordon 1994; Rothbard 1976). This structure is what Mises names the logical and praxeological structure of the mind. However, a discussion or review on the degree to which Mises is a Kantian is beyond the scope of this study. It may be mentioned here that Smith (1990) made a detailed analysis of how Mises has in practice strong Aristotelian tendencies in his derivation of the necessary truth of the categories of action. This has also been discussed by Gordon (1993), Smith (1993) and Yates (2005).

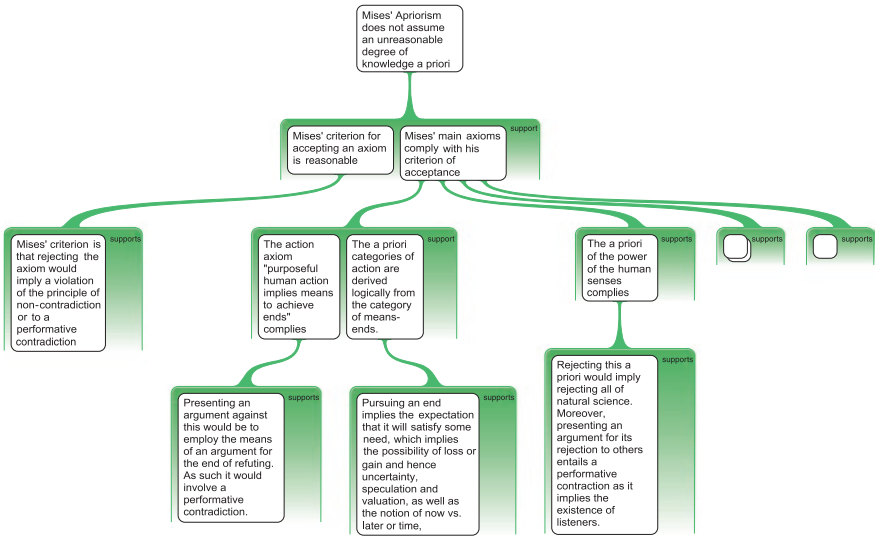

Fig. 8.2 The present stage of the argument for the reasonability of the axioms of praxeology summarized. *Source* Tonsberg (2015). *Note Map* nodes without text are introduced later due to space limitations. For a complete map with all nodes see p. 76

According to the preceding, the arguments for the a priori structure of the mind and senses can be summarized in context of the ongoing argument as shown in Fig. 8.2.

8.3 The A Priori of Regularity of Events

Mises' first epistemological principle of logic and praxeology is intimately connected to the second principle of the power of the human senses. The first connection is that engaging in purposeful action comes from psychic felt uneasiness with the state of the world and action is as such a manifestation of outside reality. In this sense, it may be said that praxeological reasoning in terms of means and ends is the bridge of thinking to the world outside (Hoppe 1995).

The second connection is the a priori category of regularity or cause. The reasonableness of accepting this a priori is based on the notion that "[n]o thinking and no acting would be possible…, if there were no regularity whatever in the succession and concatenation of events" (Mises 1962, p. 19). Hence, regularity is the cognition that connects human reason with human senses, because it makes reasoning in terms of means and ends possible. Without it…

> …there could not be any awareness of material things and their changes. It would appear a senseless chaos. Nothing could be identified and distinguished from anything else. Nothing could be expected and predicted. In the midst of such an environment man would be as helpless as if spoken to in an unknown language. No action could be designed, still less put into execution. (Mises 2007, p. 74)

Regularity then is an a priori in empiricism as well as action, because without such regularity, there would be nothing to study, no scientific action to take. Without seeing any regularity we would perish (David Gordon 1994).

Caplan has protested against the a priori of regularity, stating that Mises "at best misspeaks when he characterizes this necessary feature of action as knowledge of 'causality'" (Caplan 2001). However, it may be argued that this protest is based on a misconception. In fact, the a priori of regularity does not involve an ontological commitment to the reality of efficient cause. Mises is merely pointing to the phenomena of perceived regularity in similar events that enable us to act (Gordon 1994). Further, he does not necessarily hold that efficient cause exists, but states

> *Whatever philosophers may say about causality*, the fact remains that no action could be performed by men not guided by it. Neither can we imagine a mind not aware of the nexus of cause and effect. *In this sense* we may speak of causality as a category or an a priori of thinking and acting. (Mises 1962, p. 20) (italics added)

In other words, the mental perception of regularity is a prerequisite for action in which "the mind and reality make contact" (Hoppe 1995). It makes it possible for the mind to ponder means towards ends based on expectations, as has already been mentioned. Thus, regularity is an inescapable part of human action whereas the ontological status of cause is another matter.

Accordingly, the a priori of regularity does not reflect an extreme apriorism. Not the least because it is needed in all empirical research. Its position in the overall argument at hand can be illustrated as shown in Fig. 8.3.

8.4 The A Priori of Final Cause In Action

Another fundamental a priori category claimed by Mises is that of teleology or finality in action. That is, the study of human action is based on the a priori category of *finality* since human beings *aim at ends* in their purposeful action. To Mises this implies a methodological dualism of the natural sciences versus the sciences of human action. This is because they are guided by two different notions of cause to explain them. On the one hand, the natural sciences are guided by phenomena of constant relations or perceived efficient cause. On the other hand, human action can only be made sense of by resorting to the purpose of the actor, i.e., the teleological final cause, or the "attractor" in mathematical terms.[11] Mises (1962, p. 36) states in this regard

[11]Sheldrake (2012, Chap. 5) states: Purposes relate to ends or goals or intentions, conscious or unconscious. They link organisms to their potential futures. The word 'purpose' comes from the Latin proponere, meaning to propose or put forward. The word 'intend' comes from the Latin intendere, to stretch into. The word 'goal' comes from the Middle English gol, a boundary or limit. The Greek word for 'end', telos, is the root of 'teleology', the study of ends or goals. These words all point towards a difficult-to-understand concept. Purposes exist in a virtual realm, rather than a physical reality. They connect organisms to ends or goals that have not yet happened; they are attractors, in the language of dynamics, a branch of modern mathematics.

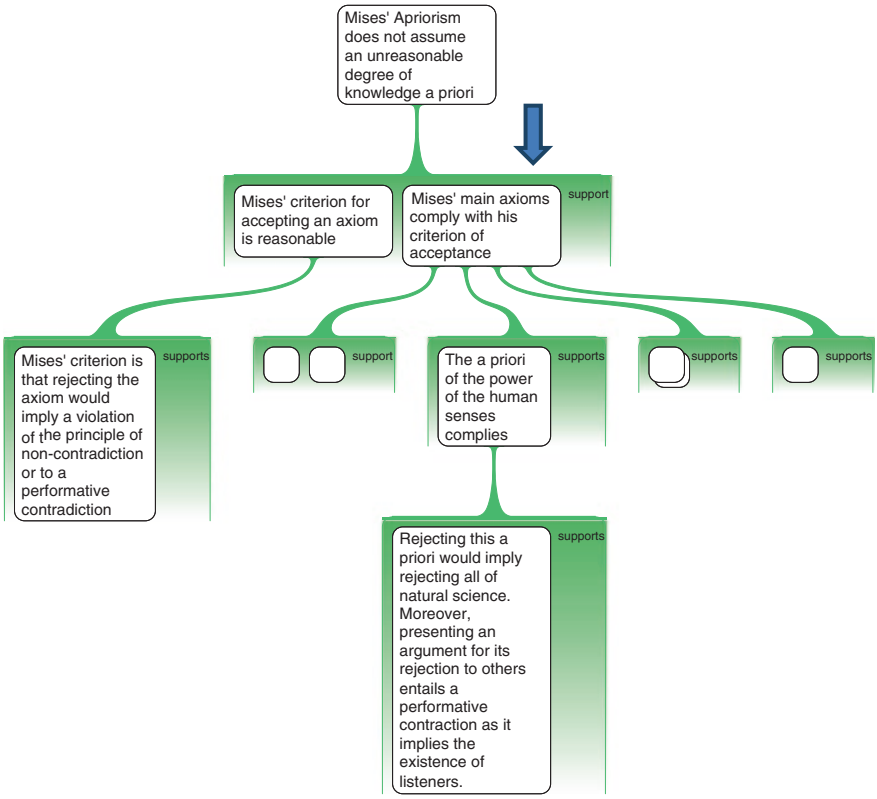

Fig. 8.3 The a priori of regularity summarized as part of the argument that praxeology does not accept unreasonable axioms. *Source* Tonsberg (2015). *Note* Map nodes without text are introduced later due to space limitations. For a complete map with all nodes see p. 76

> What distinguishes the field of human action from the field of external events as investigated by the natural sciences is the category of finality. We do no[t] know of any final causes operating in what we call nature. But we know that man aims at definite goals chosen.

The reasonability of this a priori of finality comes from the observation that the "same external events produce in different men and in the same men at different times different reactions" (Mises 1962, p. 37). The reason is that action is not mainly about the regularity of efficient cause, but about acting to change present circumstances (Mises 2002, p. lxv). This makes for irregularities in the pattern of events with which the natural sciences are poorly equipped to deal.

Moreover, it is rather "impossible to describe any human action if one does not refer to the meaning the actor sees in the stimulus as well as in the end his response is aiming at" (Mises 1962, p. 40). After all, without recognizing purposeful ends, we would merely see "people running here and there and moving their hands". Without introspection and the means-ends paradigm, even the sentence "Paul runs to catch the train," would make no sense (Mises 2007, p. 284). Similarly, if one was to imagine

the discovery of another group of creatures as advanced as humankind or more advanced, then "it would be through being taught their knowledge that we should learn to understand their actions" and not the other way around (von Hayek 1943).

However, it should be realized that Mises is not making an absolute universal commitment to this position of dualism:

> Methodological dualism refrains from any proposition concerning essences and metaphysical constructs. It merely takes into account the fact that we do not know how external events—physical, chemical, and physiological-—affect human thoughts, ideas, and judgments of value. This ignorance splits the realm of knowledge into two separate fields, the realm of external events, commonly called nature, and the realm of human thought and action. (Mises 2007, p. 1)

That is, it makes no difference whether one believes that natural science will eventually explain ideas, values, choices, and beliefs as unavoidable outcomes in the manner of chemical compounds, one is still bound in the meantime "to acquiesce in a methodological dualism" (Mises 1996, p. 18).

Hence, Mises' dualism is a practical epistemological necessity for the purpose of making sense of human action. Ontologically, on the other hand, Mises seems to lean towards a mainstream mechanistic[12] view, stating

> All that happens was, under the prevailing conditions, bound to happen. It happened because the forces operating on its production were more powerful than the counteracting forces. Its happening was, in this sense, inevitable. (Mises 1962, p. 59)

Accordingly, it is believed that Mises does not reject a deterministic view, but rather the "panphysicalistic distortion of determinism" (Mises 2007, p. 93). He argues that a scientist needs to recognize and emphasize the fundamental principle "that ideas determine human action," not because determinism is rejected ontologically, but because it is *presently* "impossible to reduce the emergence and the transformation of ideas to physical, chemical, or biological factors". To emphasize, he asserts that "[i]t is this impossibility that constitutes the autonomy of the sciences of human action" (Mises 2007, p. 93). Accordingly, the a priori of finality can be presented in context of the overall ongoing argument as shown in Fig. 8.4.

Not much has changed since Mises formulated his argument for methodological dualism and the category of finality. It is still not possible to predict purposeful action based on scientific measurement of chemical and biological factors.

In fact, even human need or personality theories such as Maslow's hierarchy, have not proven powerful for prediction of purposeful action (Jex 2002, pp. 213–214). However, some promise for need theory may be the effort of Reiss and Havercamp (1998) which used extensive surveying, factor analysis, and validity testing to generate a list of 16 ultimate human desires that correspond to the same number of traits and end goals. (Havercamp and Reiss 2003; Reiss 2004, 2008). Yet, even in this fairly recent research causes of variation in needs are *assumed* to be genetic, cognitive, and

[12]Sheldrake (2012, Chap. 5) states: "The mechanistic revolution in seventeenth-century science abolished ends, purposes, goals and final causes. Everything was to be explained mechanically, by matter being pushed from the past, as in billiard-ball physics, or by forces acting in the present, as in gravitation. This four-hundred-year-old doctrine is still an article of faith in the creed of science."

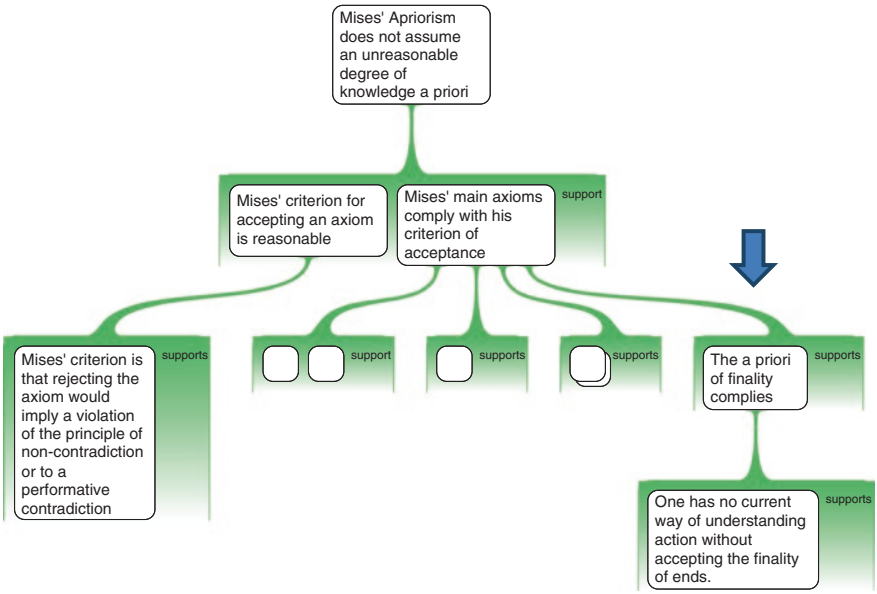

Fig. 8.4 The a priori of finality summarized as part of the argument that praxeology does not accept unreasonable axioms. *Source* Tonsberg (2015). *Note* Map nodes without text are introduced later due to space limitations. For a complete map with all nodes see p. 76

behavioral factors over time (Reiss and Havercamp 1998). That is, instead of attempting to explain the needs in terms causes, even psychological ones like childhood experiences, Reiss treats the 16 basic needs as *final* since "[n]obody knows what causes personality and human motivation" (Reiss 2008, Chap. 1). This assertion of Reiss lends extended credit to the praxeological category of teleology or finality of ends.

In the preceding, it has been attempted to show that Praxeology does not fit the first criterion for a hard apriorism. In other words, it does *not* "assume an unreasonable degree of knowledge a priori regarding the phenomena under study".[13] After all, man tries to influence the course of events and in doing so he needs to recognize knowledge of himself and the world. Hence, he needs the principle of non-contradiction. Further, to build expectations for action he also needs to recognize regularity in the natural world as well as end purpose, or teleology. Moreover, since reasoning is a purposeful activity, Mises (1962, p. 35) argues that conscious human action "implies all the categories of logic and the category of regularity". Hence, the rationale for the acceptance of the a priori categories of logic and praxeology is ultimately pragmatic, an unavoidable part of being a human actor.[14] (Mises 1996, pp. 85–86)

[13]This is the first of two criteria for a hard apriorism mentioned earlier.

[14]On the other hand, from an ontological viewpoint Mises states that it would be "preposterous to fail to recognize the significance of the epistemological discussions concerning induction, truth, and the mathematical calculus of probability" (Mises 2007, p. 305). However, an in depth look into Mises' ontological views are beyond the scope of this discussion.

Chapter 9
Methodological Principles Regarding the Role of Empirical Data in Praxeology

As mentioned, the a priori of the finality of ends, or teleology implies a methodological dualism by stressing *subjective* ideas of *individual* human actors as explanations of action and consequent social wholes. Hence, along with the apriorism already discussed, Praxeology embraces the principles of *methodological subjectivism*,[1] and *methodological individualism*. These elements can be seen as being part of the ongoing argument that praxeological apriorism is soft, in the following manner (Fig. 9.1).

Methodological dualism stands in contrast to a monistic method where one searches for regularity by establishing correlation between observable stimuli and responses as facts "without reference to consciousness and aiming at ends" (von Mises 2007, p. 245). However, an explicit call to methodological dualism is controversial since the spectacular success of the natural sciences is a powerful lure to monism.[2] For example, due to this bias introspection has been labeled unofficially banned from psychology for some 100 years (Locke 2009). Moreover, there are repeated attempts to explain human action based on the methods of physics while ignoring subjective immeasurables like meaning, valuation, and ends (Greenfield and Salerno 1983; von Hayek 1942; Lo and Mueller 2010; von Mises 1962, p. 37).

Thus, it would appear important to show that von Mises embracement of methodological subjectivism, individualism, and dualism does *not* imply that praxeology "rejects empirical data as useful for the support of theory when it is reasonably able

[1]Methodological subjectivism in the sense of making intended aims and related perceived meanings the objects of study (von Hayek 1943).

[2]The tendency to want to apply the methods of physics to the social sciences is sometimes labeled "panphysicalism," or methodological monism, or in the words of von Hayek, "scientism" (von Hayek 1942). It is the teaching "that the procedures of physics are the only scientific method of all branches of science. It denies that any essential differences exist between the natural sciences and the sciences of human action" (von Mises 2007, p. 243).

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Understanding Complex Systems, DOI 10.1007/978-3-319-40445-5_9

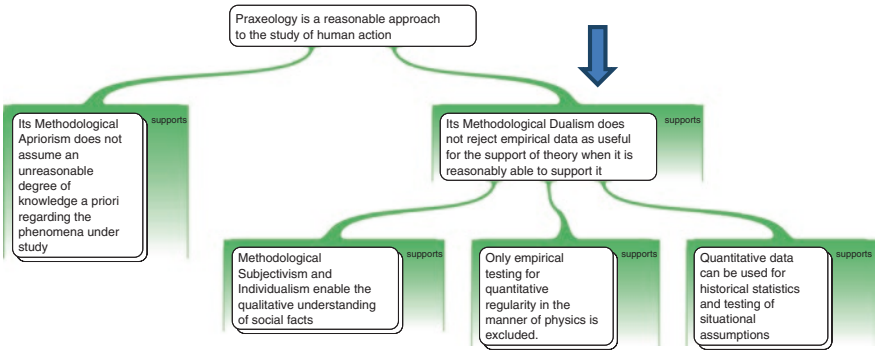

Fig. 9.1 Methodological dualism as part of the argument that praxeology's apriorism is soft. *Source* Tonsberg (2015). *Note* Map nodes without text are introduced later due to space limitations. For a complete map with all nodes see p. 76

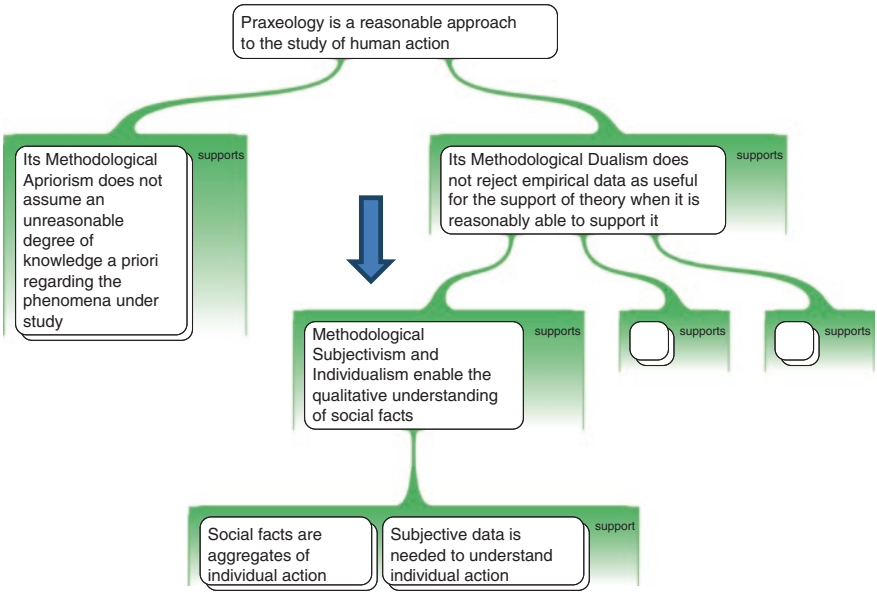

Fig. 9.2 Methodological Subjectivism and individualism as part of the argument that praxeology's apriorism is soft. *Source* Tonsberg (2015). *Note* Map nodes without text are introduced later due to space limitations. For a complete map with all nodes see p. 76

to support it".[3] Likewise, it would be important to show how dualism contributes to qualitative understanding of action phenomena. This part of the discussion outlined in Fig. 9.1 may be seen in light of the overall argument for the reasonability of praxeology as shown in Fig. 9.2.

[3]This is the second of two criteria for a hard apriorism mentioned earlier.

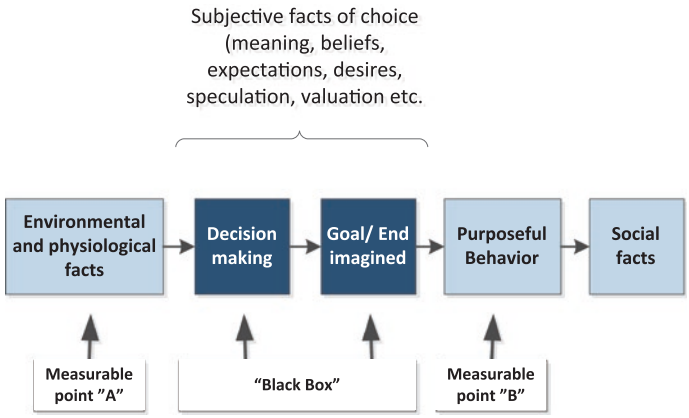

Fig. 9.3 The need for methodological dualism. *Source* Tonsberg (2015)

Following this discussion, the role of empirical data in methodological dualism will be elaborated.

9.1 Methodological Subjectivism

von Mises holds that to explain human action one has to account for ideas, such as the "philosophies, theories, and the plans and policies derived from them" that drive action and makes it intersubjectively understandable (von Mises 2007, p. 250). Due to the element of free will,[4] or irregularity in action it is only by recognizing such objects that one can make sense of the conscious behavior of others (von Mises 1996, p. 92). The point Mises is making is illustrated as shown in Fig. 9.3.

Point "A" and "B" are at least partially measurable, but there is no known quantitatively regular correlation between them. Hence, one can only understand human action by referring to the subjective information between the two points of the "black box," in particular the end or goal that the action aims at. Such subjective understanding is unique to social science (Weber 1978, p. 15).

9.1.1 The Subjectivity of Action Situational Facts

A significant reason for the importance of subjectivism is that physical items can have different meaning according to how an individual sees them from a

[4]To von Mises the notion of "free will" is "that in the production of events something can be instrumental about which the natural sciences cannot convey any information, something that the natural sciences cannot even notice" (von Mises 1962, p. 58).

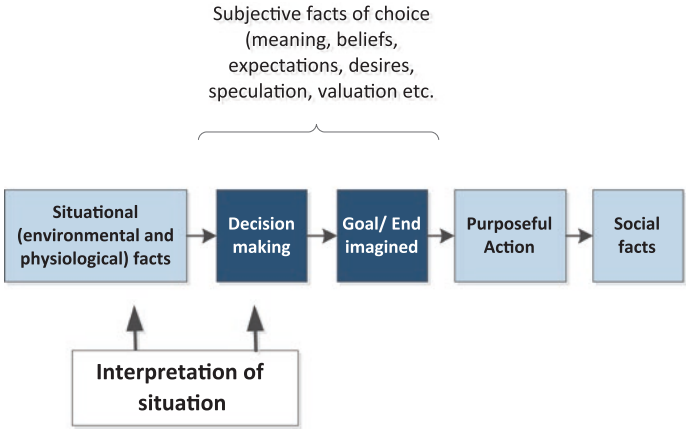

Fig. 9.4 Situational interpretation as part of action. *Source* Tonsberg (2015)

means-end perspective (Greenfield and Salerno 1983). The influence of this on action can be illustrated as shown in Fig. 9.4.

According to the situational interpretation, the very same item could be seen by an actor as a means, an end, an obstacle or a requisite condition. The converse is also true; things that appear physically different to some can still have the same meaning in the perception of others (Schuetz 1943). This of course affects the explanation of why individuals behave as they do. A simple stick, for example, might be seen as a walking stick, firewood, a weapon, a toy, material for toothpicks, a measure, and so on. Similarly, a behavior can be work, play, or something else, according to how the acting man sees it (Greenfield and Salerno 1983). In this sense for a praxeologist "things are what the people acting think they are" (von Hayek 1942).

In contrast, monistic approaches like behaviorism fail to explain why some stimuli are responded to by people in many different ways:

> To the stimulus offered by the English Channel some people have reacted by staying at home; others have crossed it in rowboats, sailing ships, steamers, or, in modern times simply by swimming. Some fly over it in planes; others design schemes for tunneling under it. It is vain to ascribe the differences in reaction to differences in attendant circumstances such as the state of technological knowledge and the supply of labor and capital goods. These other conditions too are of human origin and can only be explained by resorting to teleological methods. (von Mises 2007, p. 245)

After all, technology, labor and capital are perceived as such because they are interpreted as forms of means subjectively. Similarly, even though monetary prices are quantitative, priced goods only have value due to being valued for their ends (Greenfield and Salerno 1983).

Accordingly, to understand human action one cannot merely make simple classification[5] of environmental objects. Rather, one needs to account for subjective interpretation because praxeology is about "man's conscious reaction to the given state of this universe… it is about men, their meanings and actions" (von Mises 1996, p. 92). In other words, the method of praxeology is subjective in that opinions of human actors are treated as facts and as the picture of reality (von Hayek 1942; von Mises 1996, pp. 19–22). This is very different from the natural sciences, where an object is analyzed to find out what it "really is" beyond the senses, even to the point where it cannot be defined except by mathematical expressions[6] (von Hayek 1942).

It is of course true that some environmental stimulus factors correlate with action, such as wearing warm clothing at cold temperatures or smiling when meeting friendly strangers. However, it is also true that people choose their responses to such factors, because for the "same situation different modes of reacting are thinkable and feasible" (von Mises 2007, p. 326). This is not the least because perception is selective in focus on situational variables and could even be based on false perceptions and false beliefs about the world (Biggs et al. 2009). Accordingly, for the prediction, control and understanding of human behavior, "we can learn more by studying the ways in which minds know and influence each other than we ever can by attempting to analyze mechanically the process of interaction between bodies" (Knight 1925).

9.1.2 Subjectivity and Irregularity

It has been shown how interpretation of situational facts breaks any presumed direct and regular Stimulation → Response (S → R) causal link. Yet, there are also other unobservable factors that greatly affect the predictability of human action that would likewise be lost in a behaviorist approach, namely, preference, learning, and complexity.

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[5]von Hayek (1943) points out that science is still a far cry from explaining in a formulaic manner how all these categorizations are made. After all they are not about physical properties, but about what things or people mean to a person, how he perceives them, and how he reacts to them. Moreover, while it may in principle be possible to trace the classifications and conceptualizations people infer to physical properties, this is such a complex task that "we should probably have to wait forever" (von Hayek 1943). Moreover, this would not help the Praxeologist much since he would still be left with the task of figuring out how action leads to social structure or spontaneous organization (von Hayek 1942). He would still have to use the teleological mental entities as a starting point for understanding human action (von Hayek 1943).

[6]In fact, even with relatively simple contexts of isolated physical phenomena, mathematical expression may face considerable difficulty and resort to approximations. For example, "the Schrodinger equation for the hydrogen atom, which he is able to solve only after a considerable effort of functional analysis and special function theory, is not a literally correct description of this atom, but only an approximation…" (Schwartz 2006). Thus, there is considerable difficulty in applying mathematics to social science, as it "is able to deal successfully only with the simplest of situations, … the ability to keep many threads in hand, to draw for an argument from many disparate sources, is quite foreign to mathematics" (Schwartz 2006). Indeed, it has been stated that the application of mathematical models in economics involves ambiguities that are intrinsically inevitable (Velupillai 2005).

Preference

Of particular significance is the sense of foregone alternatives and chosen purpose, or the unpredictable dynamic between valuation, preference, and choice (Hülsmann 1999). Keynes (1988, p. 26) cleverly illustrated this in the context of Newton's legendary apple:

> It is as though the fall of the apple to the ground depended on the apple's motives, on whether it is worthwhile falling to the ground, and whether the ground wanted the apple to fall, and on mistaken calculations on the part of the apple as to how far it was from the centre of the earth.

As indicated by Keynes, an important and highly volatile variable in human action is the mental scale of preference. Indeed, this can change from one moment to the next and that is why von Mises (1996, p. 103) states:

> If in one action "a" is preferred to "b" and in another action "b" to "c", it is, however short the interval between the two actions may be, not permissible to construct a uniform scale of value in which "a" precedes "b" and "b" precedes "c". Nor is it permissible to consider a later third action as coincident with the two previous actions…. [This means that any] scale of value, which is abstracted from various, necessarily nonsynchronous actions of an individual, may be self-contradictory. (quotation marks and text in brackets added)

That is, there is no strong reason to believe that a person's scale of preferences should necessarily remain the same from one moment to the next, or is driven by an algorithm consisting of fixed relations between mathematically defined variables. This is fundamentally different from the regularities of physics, where relations can be expressed in fixed quantities expected to remain stable over time, such as $E = MC^2$. For instance, one might have made up one's mind to buy chocolate instead of strawberry cake, then suddenly for reasons unknown one feels the urge for strawberry. Or, one might prefer to work on a certain project, but after reflecting on some point one decides it is undesirable after all. Or, one might head out the door with the intention to buy a new telephone, but on the way to the shop one decides that it would be better to save the money, and so on.

Learning

Another source of irregularity that interferes with any constant $S \rightarrow R$ relationship is learning. First, a human being learns from his experience how to better achieve his ends (Henderson 2008; Hülsmann 1999). Second, as pointed out by Kahneman (2003) human "perception is reference-dependent" in the sense that how one perceives things now is related to what one has seen before. Thus, as a consequence of learning history each new experience has a sense of novelty for a human being. Third, even under the environmental assumption of *ceteris paribus* each repetition of a similar event would still be a learning experience in habit formation. Fourth, when taken from a holistic viewpoint, including all external and internal conditions, a new apparently repeated and similar experience may be interpreted or responded to in a radically different manner (Popper 1944a). All this means that it cannot easily be assumed that repeated experiences are similar in the sense they can be in the natural sciences, because they change the knowledge structure of the actor.

In fact, a human being can change his choices based on learning about any proposed choice algorithm and thereby invalidate it as a law (Hoppe 1995; Hülsmann 1999; Popper 1944a). Even if a "law b" was proposed that predicts a particular human action based on the condition that the actor knows a previously discovered "law a," then "law b" would be still be invalidated by the actor's knowledge of "law b" and so on ad infinitum. This means one could never reach a final and decisive law. Any proposed law for predicting the act of "*actor x*" must then be conditional upon him not knowing it. Moreover, it may in some or all cases also be conditional upon not being known by any other actor that could influence "*actor x*." Hence, the very notion of obtaining a constant law allowing the prediction of human knowledge appears paradoxical.

Adding to this paradox is the idea that the ability to predict what will be known tomorrow would imply already knowing it. Pertinent to this idea, von Hayek states regarding the belief that human knowledge could be fully explained scientifically:

> What this belief really amounts to is that the products of the process of mind can be comprehended as a whole by a simpler process than the laborious one of understanding them, and that the individual mind, looking at these results from the outside, can then directly connect these wholes by laws applying to them as entities, and finally, by extrapolating the observed development, achieve a kind of shortcut to the future development. (von Hayek 1941)

Hoppe (1995) makes a similar argument as does Karl Popper (1944a). However, perhaps a simpler way to explain the paradox under discussion is to say that knowing why you know every piece of knowledge that you have implies an infinite regress of explanations.

Complexity

Yet another source of $S \rightarrow R$ inconstancy in action is that regardless of the logical implications of predicting human knowledge, the practical limits of keeping track of all the relevant data puts a decisive limit to what can be achieved (von Hayek 1994). After all, "the form of action as it unfolds in its historical reality is the result of influences that range from the physiological to the religious, the social to the geographical" over time (Kirzner 1976). In fact, leaving aside attempts to predict knowledge, even the accurate diagnosis of many social situations involves a perplexing complexity[7] of variables of which many lack feasible measurement. Never mind "the formidable sources of error that open up as soon as we attempt prognosis" (Schumpeter 1950, p. 61).

One particularly confounding source of complexity and inconstancy are found in a social setting where each person's actions may depend on what he expects from others. This is because all of the perceived relevant variables affect the expectations formed of others in terms of how they will react to them. Hence, intersubjective uncertainty compounds the complexity and uniqueness of the situation (Popper 1944a; Schuetz 1953). In such cases we have a situation with multiple possible results, solutions, or equilibria (Hedstrom et al. 1998).

[7]Complexity can be defined as the "minimum number of elements of which an instance of the pattern must consist in order to exhibit all the characteristic attributes of the class of patterns in question…" (von Hayek 1994). It can also be conceptualized as "the joint effects brought about by the operation of a multiplicity of elements" of both physical and psychological nature (von Mises 2007, p. 208).

As a consequence of the above, "no general equations of social motion are known that can help predict what an individual or a social system will do when acted upon by certain stimuli or figure out the stimuli and the internal processes that caused the observed reaction" (Bunge 2004b). In other words, "there are only variables and no constants" accessible to social science in the foreseeable future (von Mises 2007, p. 12). Indeed, Flyvbjerg (2001, p. 4) argues that "social science never has been, and probably never will be, able to develop the type of explanatory and predictive theory that is the ideal and hallmark of natural science."

9.1.3 The Shared Nature of Subjective Action Facts

In light of the above, the praxeologist will attempt to understand action subjectively, even if this does not comply with natural science standards (Greenfield and Salerno 1983). However, the subjective level can still be considered a real scientific level; the level of "what people think." In this regard, it was stated by Karl Popper:

> the world of each of our theories may be explained, in its turn, by further worlds which are described by further theories – theories of a higher level of abstraction, of universality, and of testability…. we are led to take all these worlds, including our ordinary world, as equally real; or better, perhaps, as equally real aspects or layers of the real world. It is thus mistaken to say that my piano, as I know it, is real, while its alleged molecules and atoms are mere 'logical constructions'…. just as it is mistaken to say that atomic theory shows that the piano of my everyday world is an appearance only…. (Popper 1965)

Similarly, Nobel Laureate Roger Sperry (1992) stated that "the emergent whole is governed by scientific laws different from those that apply to the parts" and that from this perspective subjective values and experience become scientific explanatory factors (Sperry 1992). Indeed, some psychologists have been calling for the return of introspection to their field of study after its long ban (Locke and Latham 2004; Locke 2009). Yet, a call for the inclusion of subjective "objects" in theories of human action may raise the important question that if one cannot know anything about other people's minds except by inference based on observation of physical facts, then how does addition of subjective elements contribute to verifiable knowledge.

It is of course true that nothing can be observed of subjective elements in people's minds. However, this does not mean that one discerns nothing but physical facts (von Hayek 1943). Rather, one knows something about people's minds by virtue of being a human actor oneself with intersubjectively acquired "common sense" knowledge of the world and fellow men. Hence, the plausibility of introspection as a scientific method in praxeology stems from the fact that every man acts and can thereby understand the actions of others in terms of valuation, means and ends (Schuetz 1954). Man has preferences with regards to his states, and tries to substitute some of them for what he perceives as better. It is inconceivable that a sane human being is unaware of these facts, because value and action are "aprioristic elements present to every human mind" (von Mises 2007, p. 283). Hence, one may know something about why they want to change their situations and the uneasiness that drives them to act (von Mises 1990c, p. 8). In this regard, Tarde (2000, p. 20) stated:

> But what manner of thing is it, that can thus be transmitted from one mind to another when they enter into psychological relation? Is it their sensations or affective states? Evidently not; for these are essentially incommunicable. The only material that two subjects can communicate to each other and consciously share, with the result that they feel themselves more closely united and more similar thereby, are their notions and volitions, their conclusions and aims… a plan of campaign proposed by one general whose temperament is choleric and melancholy to others of mercurial and sanguine or passive and phlegmatic dispositions may still remain the same, if only the plan be concerned with the same series of operations, and be desired by all with equal force…

Moreover, it is the similar views people have formed of the things and people around them, which constitute the essential elements of the social order. People are not identical, yet by virtue of intersubjective communication they can fill each other's roles and relate to one another since they adopt similar attitudes toward people and objects in their environment in several ways. For one, they are all observers of the world in constant communication about what they commonly observe (Knight 1925). For another, they transmit institutions and beliefs through imitation and language (Knight 1961). In fact, all of human culture is understood on such terms, as stated by Schuetz (1953):

> I do not understand a tool, without knowing the purpose for which it was designed, a sign or symbol, without knowing for what it stands in the mind of the person who uses it, an institution, without understanding what it means for the individuals who orient their behavior on its existence.

Thus, through intersubjective feedback, and the logical as well as praxeological structure of their minds, men are able to relate and form structures of hierarchy, roles, norms, and procedures in society. However, the factors combine in often subtle ways. An example would be the interaction between entrepreneurship, money, capital, and labor in the economy (von Hayek 1942; Schuetz 1954). Relationships of this kind only appear after careful study of shared interpretations of sensory phenomena and of how people make sense of the world. Accordingly, while natural science is made possible by "the power to experiment," social science is made possible by "the power to grasp or to comprehend the meaning of human action" (von Mises 1990c, p. 9).

9.2 Methodological Individualism

The argument against quantitative laws in human action is not only from its subjective irregularities, but also partially based on the principle of methodological individualism.[8] This principle will be clarified immediately below and then an argument in its defense against monism will be presented.

[8]The first to use the term methodological individualism, however, was Joseph Schumpeter, and it was his teacher Max Weber that first elaborated this principle without actually naming it (Heath 2011). Weber's elaboration was influenced by Wilhelm Dilthey, who had emphasized the importance of understanding social phenomena based on our own humanity and pointed out that this is something unattainable in the natural sciences (Walliman 2006, pp. 23–24).

9.2.1 The Concept of Methodological Individualism

Methodological individualism is the notion that the way to understand collective action is through analyzing the actions of individuals since "a social collective has no existence and reality outside of the individual members' actions" (von Mises 1996, p. 42). This is because society and social collectives are complex networks weaved from individuals, relations, and actions.[9] In this sense, "talk of nations, classes, firms, etc.," is for the social scientist a "shorthand for talk of individuals" (Smith 1990). They are in the words of Simmel (1910) processes of interaction containing "unity composed of many, the reciprocal determination of the individuals, the reciprocal significance of the individual for the totality of the other individuals and of the totality for the individual". For example, von Mises conceptualized society from the praxeological viewpoint is as follows:

> Men cooperate with one another. The totality of interhuman relations engendered by such cooperation is called society. Society is not an entity in itself. It is an aspect of human action. It does not exist or live outside of the conduct of people. It is an orientation of human action. Society neither thinks nor acts. Individuals in thinking and acting constitute a complex of relations and facts that are called social relations and facts. (von Mises 2007, p. 251)

This does not mean that one must base social sciences on the psychological make-up of each and every individual in a social group (Heath 2011; Popper 1945). However, it is "inter-subjective relations… which bring it to pass that individuals become societies" (Simmel 1895). Accordingly, to explain social phenomena means to explain them "in terms of individuals plus relations between individuals" (Hodgson 2007). That is, explaining social phenomena is founded on the understanding of actions of individuals or groups of individuals in terms of their aims, or what Talcott Parsons called "the action frame of reference" (Parsons and Shils 1951, p. 56).

Methodological individualism also does not imply, in contrast to what some may believe, ignoring social structure (Hodgson 2007). Rather, von Mises (1996, p. 42) emphasizes that the individualistic origin or essence of social phenomena is not about a myopic focus on individuals and ignoring social wholes, but rather about understanding collectives. Accordingly, methodological individualism does not assume that society has no influence on choices made. On the contrary, how an individual perceives social reality in terms of institutions is a stimulus for action and they are in this sense "real":

> It is uncontested that in the sphere of human action social entities have real existence. Nobody ventures to deny that nations, states, municipalities, parties, religious communities, are real factors determining the course of human events. Methodological individualism, far from contesting the significance of such collective wholes, considers it as one

[9]Empiricist Karl Popper declared more than half a century ago that the appropriate method of social science is "methodological individualism": We need studies, based on methodological individualism, of the social institutions through which ideas may spread and captivate individuals, of the way in which new traditions may be created, and of the way in which traditions work and break down (Popper 1945).

> of its main tasks to describe and to analyze their becoming and their disappearing, their changing structures, and their operation. And it chooses the only method fitted to solve this problem satisfactorily.

Thus, von Mises is far from considering individuals as acting without regard for how social structure and context influences them.

Similarly, methodological individualism should not be understood to mean that there is no tendency toward regularity of social behavior whatsoever (Hodgson 1986). Actually, what methodological individualism asserts is that no individual in a group is driven to action by another logic than that of preference, means and ends. This logic is universal. Different societies do not differ in this. Accordingly, von Mises (1962, p. 62) explains ideological adherence in a society through the notion that "it is the ideas held by individuals that determine their group allegiance." He states:

> Inheritance and environment direct a man's actions. They suggest to him both the ends and the means. He lives not simply as man in abstracto; he lives as a son of his family, his race, his people, and his age; as a citizen of his country; as a member of a definite social group; as a practitioner of a certain vocation; as a follower of definite religious, metaphysical, philosophical, and political ideas; as a partisan in many feuds and controversies. He does not himself create his ideas and standards of value; he borrows them from other people. His ideology is what his environment enjoins upon him. Only very few men have the gift of thinking new and original ideas and of changing the traditional body of creeds and doctrines. (von Mises 1996, p. 46)

Thus, ideologies and groups are correlated and this may make groups look like real acting entities. However, when one realizes that this is mere correlation of ideas, "a collective no longer appears as an entity acting of its own accord and on its own initiative" (von Mises 1962, p. 62).

Moreover, as stated by Schumpeter (1980) individualism does not mean to "consider social phenomena to be nothing but the sum of individual ones." Rather, it is based on realizing that aggregates such as "[t]otal demand and total supply are concepts which rest on entirely individualistic principles" (Schumpeter 1980). That is, individualistic methods help to understand social results in terms of purposeful action, even though the social result was not the purpose of any individual action and collectives are not truly actors. This is because action in a social setting is about how people relate and deal with one another, form institutions, and so on, and this interaction is made by human beings that make choices in terms of subjective means and ends.

Accordingly, Praxeology moves synthetically from patterns of behavior in the environment to perceived meanings in actors and then toward an explanation of complex social phenomena (von Hayek 1942). It proceeds in a synthetic manner from the specific to the general and aggregate. Hence, while natural science tries to explain the unknown facts that are behind what we perceive, and psychology as a science tries to explain why we perceive and interpret as we do, praxeology tries mainly to explain the complexities of social order in light of how people perceive and interpret the world. The praxeologist studies conscious human action in order to explain the intended or unintended result of the acts of many men and how such a result is related to how they see the world.

9.2.2 The Action Origin of Social Facts

Since the rationale for dualism is based on the nature of individual action, a possible way to justify monism is to refute methodological individualism and claim that collectives and other social properties are objects that can be studied as independent entities. Accordingly, Sawyer (2004) proposed that drivers of action "such as intentional states are themselves realized in the lower level substrate of neurons and their synaptic connections" and yet individual action properties are taken as ultimate explanatory properties. The lower level substrate is simply ignored. Since this is the case, by analogy social properties could be taken as ultimate data without reference to individual action (Sawyer 2004). Similarly, Bunge (2004b) argues that "a market is a thing, in particular a concrete system composed by people and fruits of labor, whose central mechanism and raison d'être is the exchange of goods and services."

Sawyer's argument is not new. The holist approach of considering social properties as objects belongs to the tradition of attempting to use the methods of physics to discover what "social objects" really are in terms of causes and effects. Its foundation is to regard "social facts as things" to be described "by elements essential to their nature" (Durkheim 1966, Chap. II: I).[10] Its rationale is that "there is between psychology and sociology the same break in continuity as between biology and the physicochemical sciences" (Durkheim 1966, Chap. V:I). This method

[10]Perhaps the most influential proponent of this holistic approach to social properties has been Durkheim, who describes his method as "objective" and "dominated entirely by the idea that social facts are things and must be treated as such" (Durkheim 1966, Chapter Conclusion). However, such a method is also traceable to Marxists like Engels, who stated as an example: "Conflict between productive forces and modes of production is not a conflict engendered in the mind of man…. It exists, in fact, objectively, outside us, independently of the will and actions even of the men that have brought it on" (Engels 2005, p. 66). Notably, such methodological holism was categorized already by Mill as being a kind of "sociological inquiry" that studies "the simultaneous state of all the greater social facts or phenomena" as a whole (Heath 2011; Mill 1882, pp. 630–633). Mill holds that this holistic method when combined with laws of psychology and ethology (character formation) could conceivably be used to predict the future state of society, a realization first to have been made by Comte (Bourdeau 2011; Mill 1882, pp. 602, 633). On the other hand, Comte ascribes to Montesquieu the positivist notion of "political phenomena as subject to invariable laws, like all other phenomena" (Comte and Martineau 2000, p. 166). However, Popper traces the idea of historical evolutionary laws all the way back to Plato as does Gabriel Tarde (Popper 1945; Tarde 2000, p. 17). Besides the abovementioned, major proponents of holism include philosophers George Lewis and George Eliot; social theorist Harriet Martineau, who became a translator of Comte's works; Frederic. Le Play, a pioneer of social surveys; Herbert Spencer, the famous social evolutionist; historians H. T. Buckle and William Lecky; sociologists Espinas, Levy-Bruhl, Durkheim, Francois Simiand, T. Veblen, L. T. Hobhouse and K. Lamprecht (von Hayek 1941, pp. 318–20). A major exception among French sociologists of this period was Gabriel Tarde who was a pioneer in the study of social networks but fell into the shadow of Durkheim and his collectivist approach (von Hayek 1941, p. 320; Katz 2006). Another prominent scholar of a more individualist inclination was of course Max Weber, who was the first to bring a refined individualist methodology to sociology and oppose its collectivism (Roth and Weber 1976; Udehn 2002; Walliman 2006, pp. 23–24).

of considering social facts as objects appears true to the approach of the natural sciences by classifying objects not according to how they appear, but how they relate and react to one another in order to find simpler, or more general rules (von Hayek 1943). Accordingly, it is hoped that statistics will reveal scientific laws of social systems, a notion pioneered by Adolphe Quetelet, Thomas Henry Buckle, Frederic Le Play and others (von Hayek 1941, p. 318; von Mises 2007, p. 84). An example is the attempt in general systems theory[11] to build mathematical computer models that discover lawful patterns in higher level social units.

However, in response to Sawyer's proposal it could be argued that ignoring the neural level explanation of human action is different from ignoring human action in social properties. There are several reasons for this.

First, unlike the link between the neurological and physiological levels to particular preferences, choices and actions, social phenomena are actually known[12] to depend on individuals, their actions and the relationships between

[11]In general systems theory attempts are made to discover high level theories "somewhere between the highly generalized constructions of pure mathematics and the specific theories of the specialized disciplines" (Boulding 1956). Partially this trend could be seen as encouraged by the success of interdisciplinary operations research in World War II (Jackson 2003, pp. 16–17). However, it was also seen as a means to rectify the increasing departmentalization of academia, where "physicists only talk to physicists, economists to economists—worse still, nuclear physicists only talk to nuclear physicist's and econometricians to econometricians" (Boulding 1956). It was hoped that mathematically expressed meta level theories would help to bring unity to science (Checkland 2000).

However, it should be noted that not all systems thinking approaches are founded on the methodological collectivist approach. Already in the nineteenth century Tarde (2000, pp. 19–22) conceptualized society as a network of individuals communicating beliefs and desire. Peter Checkland's Soft Systems Methodology is another prominent modern example that recognizes the importance of intentional action and sense making (Checkland 2000). In fact, Praxeology could also be considered as a form of systems thinking. In addition, analytical sociology accounts for individualist principles in its mechanisms or models that can be seen as a form of systems theories as well. As stated by Hedstrom and Bearman: "… structural individualism is a methodological doctrine according to which all social facts, their structure and change, are in principle explicable in terms of individuals, their properties, actions, and relations to one another" (Hedstrom and Bearman 2009b).

Clearly, this structural individualism is simply a form of methodological individualism "emphasizing the explanatory importance of relations and relational structures" (Hedstrom and Bearman 2009b). Similarly, Bunge (2004b) calls to "systemism" which is committed to a more moderate holism that "rejects the intuitionist epistemology" often associated with it and thus encourages explaining social aggregate phenomena or systems in terms of Components (parts), Environment, Structure and Mechanisms, or the CESM model. Tilly (2001) is another prominent social scientist that has called for more explanatory mechanisms with a cognitive, environmental or relational focus.

[12]Yet the attraction of finding something more than action to explain social facts remains ever persuasive, as Tarde (2011, Chap. I:I) stated: "But are we to consider that human acts are the sole factors of history? Surely this is too simple! And so we bind ourselves to contrive other causes on the type of those useful fictions which are elsewhere imposed upon us, and we congratulate ourselves upon being able at times to give an entirely impersonal color to human phenomena by reason of our lofty, but, truly speaking, obscure, point of view. Let us ward off this vague idealism".

them (von Mises 1962, p. 62). This means that the mechanisms between action and social facts are understandable and to neglect this fact contradicts the customary nominalist approach of science (von Mises 1951, p. 66; Popper 1944a).[13]

In contrast, group statistics employed to understand human action actually ignores the particulars of individual values and beliefs that we know drive cooperation, group activity, and other social phenomena (von Mises 2007, p. 261). Hence, mere statistical association offers little explanation and often leaves much to explain. As stated by Stinchcombe (1987):

> A student who has difficulty thinking of at least three sensible explanations for any correlation that he is really interested in should probably choose another profession.

Perhaps an illustrative example of such "black box statistical studies" would be a recent finding reported in "Medscape Today" that "high consumption of carbonated, nondiet soft drinks was associated with a statistically significant 9–15 % greater likelihood of engaging in aggressive behaviors. Heavy soft drink use had about the same effect as tobacco and alcohol on violence" (Newman 2011). One researcher responded to this finding by stating, "it defies common sense" pointing out that low income groups and minorities tend to consume more soft drinks (Newman 2011). But, even being from a low income group or minority cannot automatically be considered a cause since it could for example be that a minority adopts a strong value preference against violence. In such a case, soft drink consumption could have become negatively correlated with violent behavior. In short, it could be argued that while social statistics can be helpful to detect certain phenomena it does little in terms of explanation. To explain, one cannot but investigate the purposeful human action behind the numbers.

Second, many social properties are but mental conceptualization based on relating things according a means-ends perspective (von Hayek 1943; Popper 1959). For example, the concept of a factory can be understood as a single "thing", because it is a means to an end. As Bunge[14] admits, "factories are invisible: what one can perceive is some of their components—workers, buildings, machines, reservoirs, and so on—but not the way they work synergically, which is what keeps them together and going." Likewise, collective generalizations such as "society," "the military—industrial complex," "the company," and "the elite," are theories based on recognizable patterns of human action and relationships (von Hayek 1942). Similarly, interest rates, inflation, and unemployment figures are the results of millions of decisions made by individuals (Heath 2011). They are not uniform

[13]This understandability means that a nominalist social science has to analyze sociological models "in terms of individuals, their attitudes, expectations, relations, etc. (Popper 1945)".

[14]This is the same Bunge that was quoted earlier arguing that a market is a "thing".

objects (Popper 1945).[15] They neither act, nor react, and there is therefore nothing that can be discovered about its parts from its properties as a whole (von Mises 2007, p. 254). Rather, what has to be explained "is how the individuals are induced to act in such a way that mankind" as a collective obtains a certain structure or pattern or collective state (von Mises 2007, p. 112).

Third, it must be kept in mind when studying collectives that every human being is a separate entity that might act in unique ways. There can in fact be a great deal of difference between individuals in terms of their mental and physical traits, as well as in impact on historical events, a fact that is not fully recognized by a holistic approach to social properties (von Mises 2007, pp. 326–332). For example, a holistic approach does not account fully for such phenomena as Napoleon, the Wright Brothers, Thomas Edison, Isaac Newton, and others.

Fourth, studying group interests as a whole hides important dynamics of individual action within them, not the least "patterns of collectively self-defeating behavior" such as free rider problems (Heath 2011). An archetype of this sort of pattern is the so called "prisoner's dilemma" where each of a couple of prisoners is better off if confessing alone, worse off if both remain silent and still worse off if both confess. The worst case scenario is to remain silent while the other party confesses. In this case both might choose to confess instead of keeping silent, even though as a group they would be better off both being silent (Kuhn 2007). An example is that a member of the labor class may not act according to the interest of his class, because he will weigh the options of joining in revolt, or sit at home and avoid risk, yet get the benefit if the revolt should succeed (Elster 1985, pp. 351–352). This problem affects the validity of viewing the labor class as a collective.

Fifth, looking at social properties as objects based on analogy from physics neglects the fact that groups are very fluid and temporal phenomena, quite unlike atoms as members of a molecule or even animals as part of a flock. In fact, a single man in the course of a single day performs actions that make him a member of different groups according to the ends he seeks. von Mises illustrates:

> The individual American's thoughts and conduct cannot be interpreted if one assigns him to a single group. He is not only an American but a member of a definite religious group or an agnostic or an atheist; he has a job, he belongs to a political party, he is affected by traditions inherited from his ancestors and conveyed to him by his upbringing, by the family, the school, the neighborhood, by the ideas prevailing in his town, state, and country. It is an enormous simplification to speak of the American mind. Every American has his own mind. (von Mises 2007, p. 191)

[15] Actually, it may be argued that complex concepts aren't identical even in the natural sciences when all circumstances are considered. It is rather the questions asked and what is seen as relevant to their answers which narrows the picture of reality studied toward some similarity between objects. In the study of history it is the same. It is the questions asked that will make a situation look different or similar. Hence it is true that historical events are highly different from one another as a complete whole, but this does not mean that there is no room for theory based on similarity at all. In fact, the historian needs the natural sciences to explain natural events, and he also needs the dissatisfaction-means-ends logic of Praxeology to develop plausible explanations for human actions (von Hayek 1943).

The activities of groups are the activities of the individuals in them; they exist because there is some end sought by the individual participants who believe that cooperating with the group will help them achieve it. They spring from the value judgments of the individuals in them and their opinions regarding "the effects to be expected from definite means." To understand groups then, one must start with conscious human action of *the individual* (von Mises 2007, p. 258).[16]

For the reasons mentioned, complex social phenomena differ from those of the natural sciences, even if they may share unpredictability in terms of:

(a) sub-elements, such as the behavior of individual atoms,[17] and;
(b) the multitude of interacting variables.[18]

After all, von Mises (2007, pp. 88–89) points out, in natural science it is often known that a class of events will have effects of a certain proportion even if individual events are uncertain.[19] Moreover, complex physical events like a falling apple only have a few underlying constants. In contrast, while human beings bare some resemblance to cells[20] in being organisms that change from moment to

[16]This is very different from the objective and mechanical approach of the natural sciences. In these, one tries to discover realities beyond the human senses, such as the atom. In other words, "science breaks up and replaces the system of classification which our sense qualities represent" (von Hayek 1942). It ignores meanings perceived in objects that are not related to how they react to one another. Hence, natural science not only aims for a high level of precision, but is also disinterested in how things appear. It is rather concerned with discovering a better classification in order to discover the facts behind sensory appearances by employing precise measurement and statistics (von Hayek 1942).

[17]There may be unpredictability in the sub-elements of a system. E.g., just like it is not always known how a certain person will behave, it is also not always known how an individual atom will behave.

[18]There may be a large amount of interacting variables affecting a physical phenomenon. E.g., Newton's apple as a simple existential event is explained not by one but several causal laws (Friedman 1984; Hempel 1994; Popper 1945). In fact, some natural science phenomena defy prediction or lab testing altogether (Popper 1945). That is why e.g. "predictive biology is almost unheard of" (Emmott 2008).

[19]von Mises (2007, pp. 88–89) states: "What the neo-indeterminist school of physics fails to see is that the proposition: A produces B in n % of the cases and C in the rest of the cases is, epistemologically, not different from the proposition: A always produces B. The former proposition differs from the latter only in combining in its notion of A two elements, B and C, which the perfect form of a causal law would have to distinguish. But no question of contingency is raised. Quantum mechanics does not say: The individual atoms behave like customers choosing dishes in a restaurant or voters casting their ballots. It says: The atoms invariably follow a definite pattern".

[20]Biology shares with social science not only the complexity of events, but due to the uniqueness and continuous change of organisms, biology has also resisted mathematicization (Horgan 1995). Accordingly, "predictive biology is almost unheard of" (Emmott 2008). Hence, it may be tempting to consider social science as analogous to biology, as Herbert Simon indicated in his Nobel memorial lecture: "Human behavior, even rational human behavior, is not to be accounted for by a handful of invariants…. If we wish to be guided by a natural science metaphor, I suggest one drawn from biology rather than physics…. [From it w]e can see the role in science of laws of qualitative structure, and the power of qualitative, as well as quantitative explanation" (Simon 1979).

moment,[21] they are also different in several ways. for example, they have ideas and purposes, interpret and predict the natural and social environment, choose how to integrate themselves with others, or to even act antisocially (Gunning 2009a, p. 29; von Mises 2007, pp. 253–254).

As a consequence of this inconstancy and variability von Mises (2007, p. 89) argues that statistics merely describes patterns that happened at a particular time to a particular group at a particular place. They cannot show any universal constants of proportions let alone strict causality (von Mises 2007, p. 89; Popper 1944a, 1945). Hence, datasets are situational and even if they were standardized for further collection and testing, this fails to account for ongoing changes in social reality (Elster 2007, pp. 49–50). Accordingly, statistical methods in social science can only be testing if one's assumptions held for the particular case measured. This is a point that will be elaborated on in the discussion on the use of empirical data in praxeology.

9.3 Methodological Dualism

As discussed, subjectivism implies quantitative non-regularity at the level of individual action. On the other hand, individualism entails non-regularity at the meso- or meta-levels of social facts. Hence, together subjectivism and individualism imply a lack of quantitative regularity in social science as a whole and that the approach to this science cannot be based on a simple extension of the methodology of physics. Accordingly, as illustrated in the Fig. 9.5, they imply a methodological dualism.

In the following, dualism will be elucidated in terms of the methodological consequences of irregularity, the characteristics of social science, and some examples of the type of predictions that can be made.

9.3.1 The Methodological Consequences of Irregularity

von Mises seems to find support for the opinion that quantitative prediction is an impossible task in social science among social scientists like Elster (1999, pp. 1–3),

[21]Seemingly simple actions can be difficult to express mathematically. E.g. even relatively simple acts like "posting a letter" or "kicking a ball" involve complex and irregular series of movements that cannot be standardized and defined mathematically. Rather, there are interpretation and rough standards involved in order to describe such acts (Hamlyn 1953). It follows that social events are even more problematic. Accordingly, Bunge (2004a) observed that "mathematical 'catastrophes' are singularities in manifolds, not social disasters; mathematical 'chaos' is the complexity involved in certain nonlinear differential equations; and the 'systems' that dynamical systems theory deals with are not concrete systems but systems of ordinary differential equations". Accordingly, statistics cannot measure the whole of society in the way movement is measured in physics, so there can be no "laws of motion of society" in the collective holistic sense because one can only measure particular aspects of society and not the whole of it (Popper 1945).

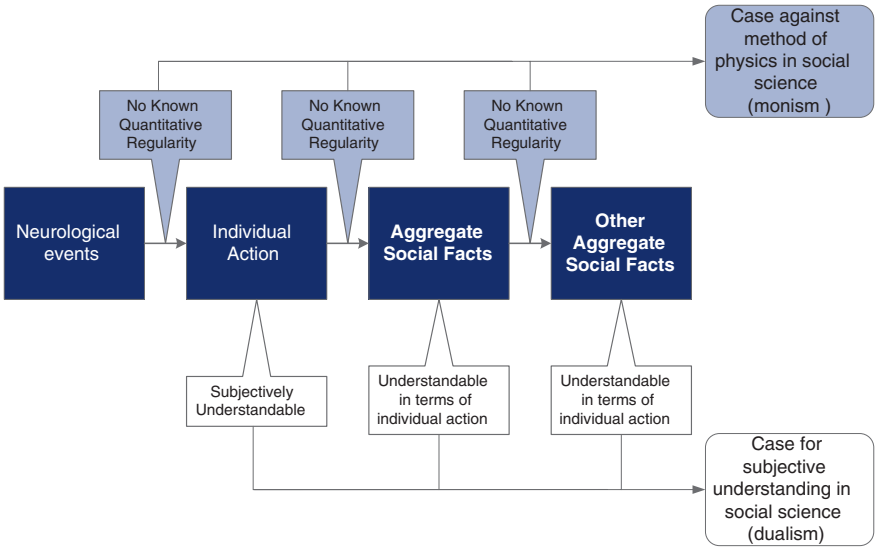

Fig. 9.5 The case against monism and the case for dualism. *Source* Tonsberg (2015)

Flyvbjerg (2001, p. 4), Bunge (2004b), and Hedstrom (2005, p. 15). The consequence of this view is that any proposed law of human action or its social aggregates can only be stated as a general principle, and perhaps preclude certain results,[22] but without any quantitative laws,[23] i.e., praxeology can have algebraic equations of relevant elements, but is unable to plug in any specific quantities for accurate prediction (von Hayek 1994). Similarly, as stated by Elster (2007, p. 467) one may analyze what elements brought about a certain action, but not synthesize these to predict particular actions. Instead, the best one can hope for is a model of explanation for particular social events that is free of inconsistencies but subject to interpretation in terms of its adequacy (Greenfield and Salerno 1983).

[22]It is noteworthy that Popper proposes such a focus for social science and warns that an analogy between natural science and social science can only be employed "as far as it is fruitful" (Popper 1944b). Accordingly, he stresses discovering patterns of typical unintended social consequences of action to serve as technological laws. These are to serve as guidelines to *what cannot be achieved or avoided for a given situation*, but unlike laws of natural science these do not attempt to predict what the future will look like (Popper 1959). This methodology applies for both private problems such as worker productivity of business enterprises or charities and to government policies such as interventions in the economy (Popper 1944b).

[23]It may be noted that there are a number of important qualitative explanations in the "hard" sciences as well, such as "the cell doctrine in biology", "the theory of plate tectonics" in geology and "the germ theory of disease" in medicine, the "doctrine of atomism" in chemistry (Newell and Simon 1976; Thagard and Toombs 2005). Accordingly, Herbert Simon emphasized the importance of qualitative explanations in science (Newell and Simon 1976; Simon 1979).

This brings the discussion to a key point: social science must necessarily make ceteris paribus assumptions. As stated by Schumpeter (1950, p. 61):

> Analysis, whether economic or other, never yields more than a statement about the tendencies present in an observable pattern. And these never tell us what will happen to the pattern but only what would happen if they continued to act as they have been acting in the time interval covered by our observation and if no other factors intruded.

Hence as a consequence of having no quantitative laws, *ceteris paribus* generalizations regarding human action serve the same function as laws in natural science (Lange 2002).

A similar view is shared by many social scientists. For example, economics is seen as a deductive science based on ultimate a priori data in both the classical[24] and Austrian view (Hausman 2008; Hoppe 1995). Indeed, even Keynes held that economics is "a kind of logic" in which valuable progress can be made "merely by using your axioms and maxims" (Keynes 2003). Indeed, despairing[25] of the quest for any constant laws of social science, Popper (1972, p. 179) called to the use of typical models of social situations based on assumptions (Champion 2010; Hedstrom et al. 1998).[26] Accordingly, the field of analytical sociology has turned to building models founded on purposive human action to explain social macro phenomena rather than searching for universal social laws (Hedstrom and Udehn 2009).

In agreement with this, a praxeologist builds deductive qualitative models with a priori axioms and other assumptions on the basis that he knows something about

[24]It may be noted that Mill (2008, pp. 41–42), in spite of his empiricist views, and more contemporary Knight (2008) and Robbins (2008) all pointed out the a priori or given nature of the facts of human action, and the need for assumptions.

[25]He stated that based on understanding personality one may predict how a person is likely to act given a certain situation. However, "since there are infinitely many possible situations, of infinite variety, a full understanding of a man's dispositions does not seem to be possible" (Popper 1972, p. 299).

[26]Popper stated: "Admittedly, no creative action can ever be fully explained. Nevertheless, we can try, conjecturally, to give an idealized reconstruction of the problem situation in which the agent found himself, and to that extent make the action "understandable" (or "rationally understandable"), that is to say, adequate to his situation as he saw it. This method of situational analysis may be described as an application of the rationality principle" (Popper 1972, p. 179). Such rational action models would according to Popper serve as baselines for the evaluation of empirical results to see the extent of deviation, a notion suggested earlier by Weber (Popper 1945; Weber 1978, p. 6). This appears to be in conflict with von Mises' view that empirical data are mere history and cannot be used to test a theory.

human action by virtue of being an actor.[27] For example, he may presume to influence action "in a desirable direction by such empirically developed practices as praise and blame," even if one is unable to control or predict particular actions due to lack of "information on all the particular facts which determined it" (von Hayek 1994).

However, it should be noted that in spite of his espousement of qualitative theories, von Mises does not reject mathematical economics *en totale* (Caplan 1999). von Mises' position could be considered close to the position of Hayek, namely that mathematical technique helps to understand the general character of a pattern and how the variables interact. However, he is cautious of the illusion that such models can be used for quantitative prediction or finding numerical constants (von Hayek 1989). As Schwartz (2006) warns:

> Unfortunately… an absurdity in uniform is far more persuasive than an absurdity unclad. The very fact that a theory appears in mathematical form… somehow makes us more ready to take it seriously… *The result, perhaps most common in the social sciences, is bad theory with a mathematical passport*. (emphasis added)

Similarly, Keynes (2006, p. 272) notes that too much mathematical economics may "allow the author to lose sight of the complexities and interdependencies of the real world in a maze of pretentious and unhelpful symbols."[28] Even something as simple

[27]E.g. as discussed later, we know as actors that purposive acts are subjectively driven by mental acts of choice that "refer either to ultimate ends or to the means to attain ultimate ends. The former are called judgments of value. The latter are technical decisions derived from factual propositions" (von Mises 2007, p. 12). Moreover, one's experience of being an actor oneself compels one to admit what is self-evidently true of purposive action a priori. These are the categories of action, like means, ends, time, uncertainty, psychic felt uneasiness, etc. For example, we know that we act out of some subjectively felt uneasiness, whether grounded morally, hedonistically or otherwise. Moreover, we know that we choose means based on the hope that it will help us reduce this uneasiness. This is the sort of knowledge that is accepted as axioms a priori by von Misesian economists and praxeologists. It is considered to be part of the inescapable structure of our minds, namely, "the common principle on which they classify external events, provide us with the knowledge of the recurrent elements of which different social structures are built up and in terms of which we can alone describe and explain them" (von Hayek 1942). However, it should be noted that Praxeology carefully segregates theories about social facts that people themselves form. This is because the role of the social scientist is to improve these theories by getting to the real causes of purposive action and social structure. For example, if there is a change in the price of a commodity then people will have many theories as to why it changed and accompanying theories of its value. The praxeologist or social scientist ignores these and tries to find the real concepts and motives that drive and result from action (von Hayek 1942).

[28]The most commonly used model, for example, is the model of general equilibrium. It is not a reflection of reality, but a fictional ideal, a model in which there is no change, and therefore no uncertainty, and no profit. In contrast, as Schumpeter (1950, pp. 82–83) points out, the real market economy "is by nature a form or method of economic change and not only never is but never can be stationary". Other examples include the strategic interactions of game theory and similar simulation models that have been developed mathematically for social science. For example, Thomas Fararo has proposed what he calls the "axiomatic method" where axioms are assumed statements on which all defined terms are based and then "proved statements are obtained by deduction from the axioms of the defined terms" (Fararo 2002).

as the supply and demand curves serve mainly an explanatory purpose; their actual shape is not known, neither for the past, nor the future. All that is known is that prices are a posteriori, and they are simply assumed to reflect the intersection of such curves (von Mises 1990c, p. 8).[29] As Buchanan (1982) points out, such curves are metaphors to help understand the interaction of billions of individual choices and results followed by further different wants and choices in an unceasing stream of change.

9.3.2 Characteristics of Social Science Based on Dualism

Based on the above, some descriptive characteristics of social science founded on dualism may be proposed as follows:

1. It cannot produce any measurable constants, because there are no known constant relations, or standards of classification and measure[30] in the manner a physicist can measure the "specific density or weight of atoms" (von Mises 1990c, p. 6).[31] This means that its theories do not rely on quantitative induction from historical data for discovering laws. Rather, it employs deductive models based on *ceteris paribus* assumptions. These assumptions are by default either claimed to be true a priori or not. In praxeology the former would be the categories of action, which will be presented in the following chapter, while the latter would be assumptions of a more empirical nature with varying degrees of plausibility, such as the disutility of labor.

[29]In fact, to develop a demand curve a number of assumptions are made for a typical agent, such as: the consumer is able to compare any two bundles of goods and services and either prefers one over the other or is indifferent; consistency in ranking, so that if the utility of X_1 is preferred to that of X_3, and X_3 is preferred to X_2 then X_1 is preferred to X_2; the quantities of goods or services are divisible continuously, to make it a continuous curve, and; monotonicity, or "more is better," meaning that utility increases with the quantity of a good (O'Sullivan 1987, pp. 77–81). Clearly, such curve models are nothing like the formulas of physics, for even if their assumptions were realistic, one has no real constants to fill into their equations, or even firm knowledge about preference rankings at any particular time, let alone from one time to another.

[30]It may in contrast to the above be argued that price is a measure in the social science of value or of a commodity in itself (von Mises 1990c, p. 8). However, prices cannot be considered as measures of either of these, because a transaction takes place only when an actor prefers the good over the money he pays for it. If they were equally preferred, then no transaction would take place. By the very act of purchasing he demonstrates that he prefers one to the other at the time of purchase, and there is no reason to assume that the price is equivalent to the good (von Mises 1990c, p. 8). In this sense, even prices are not measures in the manner we find in physics because they are not measures of a concrete object but social phenomena resulting from unique, ordinal and subjective preferences of individuals.

[31]The requirement for resemblance and constant relations is elucidated by Tarde, (2011, Chap. I:I) as follows: "Knowledge of causes is sometimes sufficient for foresight; but knowledge of resemblances always allows of enumeration and measurement, and science depends primarily upon number and measure…. As soon as a new science has staked out its field of characteristic resemblances and repetitions, it must compare them and note the bond of solidarity which unites their concomitant variations".

2. A deductive theory can be refuted on two points: either faulty logic, or the use of assumptions that "do not have any counterpart in the reality which we wish to explain" (von Mises 1990c, p. 10). In other words, it should be inquired "whether the special conditions of action which we have implied in our reasoning correspond to those we find in the segment of reality under consideration" (von Mises 1990c, p. 10). This is exactly the basis for scientific discourse in Praxeology, rather than a reliance on empirical correlational data to test hypothesis (Long 2006). In other words, due to quantitative irregularity, the deducted models of social science can be neither falsifiable nor verifiable in the quantifiable natural science sense. Rather, human action theories will apply to reality only as much as the assumptions they are based upon turn out to agree with reality.
3. Empirical data can be used for two purposes in the study of purposeful human action. The first is merely to demonstrate theorems based on historical examples. The second is to test empirical assumptions.[32] These may be regarding tendencies or norms in how people act based on motivational, practical, and institutional regularities. They may be of high probability, and vary between being highly situational or to being more universal, even if they are not deterministic laws (Demeulenaere 2011). They can be tested for their realism or to learn more about a particular setting. For the latter purpose in particular, the more they are controlled in terms of scope in time and environmental factors the more they would be useful for knowing about tendencies of action and social structure (Parsons 1949, p. 747). Hence, the social scientist will in such cases "avoid undertaking reforms of a complexity and scope which make it impossible for him to disentangle causes and effects, and to know what he is really doing" (Popper 1944b).
4. Deductive theorems aim "at knowledge valid for all instances in which the conditions exactly correspond to those implied by its assumptions and inferences" (von Mises 1990c, p. 18). Such assumptions could be of a physiological, biological, environmental, or geographical nature that help explain social facts (Gunning 1989). However, it is not necessary that all theorems aim to be realistic. For example, whether a socialist community exists or not, one can build a model of it to see if it could be realized and what the consequences for society would be. Alternatively, one could build a model of static equilibrium, in order to see what the implications of change are, such as entrepreneurship, profit and loss (von Mises 1990c, p. 10). Further, one can study the hypothetical nonmarket conduct of an isolated man as well as "actions which are in a loose manner of speech called 'noneconomic'" (von Mises 1996, p. 234).

[32]In Praxeology these would be assumptions that are not the categories of action, i.e., not implied in the concept of purposeful action. After all, if a theorem of purposeful action is wrong, it will not be due to what is implied in the concept of action. Hence, one is left with possible flaws in logic or empirical assumptions.

5. A deductive approach like the one of praxeology "easily lends itself to errors," but for the reasons elaborated earlier "it is the only method available" (von Mises 1990c, p. 10). Even Karl Popper admits that in many cases in social science all one can do is resort to "experiments carried out mentally" to test theories (Popper 1944b, p. 134). That is, the best one can do is resort to counterfactual if-then reasoning.[33]
6. Theories of human action, such as the law of supply and demand, tell us what happens in principle but cannot provide us with accurate quantitative prediction tools. For example, in this case one can explain the principle of how prices develop, but one cannot predict them accurately (von Hayek 1942). As stated by von Mises:

> We can predict… that—other things being equal—a fall in the demand for "a" will result in a drop in the price of "a". But we cannot predict the extent of this drop. This question can be answered only by understanding. (von Mises 1996, p. 118) (Quotation marks added)

In other words, human action-based theory can only aim at *ceteris paribus* pattern predictions based on general theoretical principles. To illustrate what this means in more concrete terms, some examples are given next.

9.3.3 Examples of Qualitative Prediction or Laws

An example of what could be considered praxeological law is the law of supply and demand, which states that an increase in supply or a decrease in demand will ceteris paribus lead to a fall in price. This rule is not known to be true based on empirical testing, but based on the a priori assumption or knowledge that another marginal unit of supply will not be preferred to the existing, since it does not bring more satisfaction. Hence, this law is a derivative of the a priori categories of action and the subjective theory of value under the condition of monetary exchange. This is assuming that everything else remains the same, including the kind of satisfaction the particular good[34] is intended for.

Other laws identified by von Mises (1996, pp. 119–131, 159–163) in Human Action, besides the categories of action, include:

- the law of marginal utility, which was explained earlier in the discussion on the subjective theory of value.

[33]Popper (1945, pp. 86–87) engaged in what looks much like deductive praxeological theorizing. For example, he identified the factors needed for scientific progress as language, writing, and competition of ideas, i.e. competition by means of their presentation, discussion and criticism. He arrived at these factors by first asking how one could arrest scientific progress. This is exactly the type of procedure von Mises used to identify a priori categories of action; without means there is no action, without psychic felt uneasiness there is no action, etc.

[34]It should be kept in mind that the value of an object is according to the meaning it is seen to have for an actor.

- the law of returns (the law of diminishing returns), holds that there is an optimal combination for the factors of production. If this was not true, then unit increases in production for each additional unit of a factor of production would be stable or increasing indefinitely. For example, one would be able to increase farm output indefinitely simply by adding labor (von Mises 1996, pp. 127–131).
- the Ricardian law of association (the law of comparative cost) which states that under conditions of immobility of labor and capital a nation that has more efficient labor for producing two goods would still benefit from focusing production where it is most efficient, and buy the other good from a less efficient country (von Mises 1996, pp. 159–163).

Hoppe (1995) proposes two other examples of praxeological laws:

- voluntary exchange between two people implies that they both expect to gain by valuing the good to be purchased higher than its price.
- "whenever minimum wage laws are enforced that require wages to be higher than existing market wages, involuntary unemployment will result" (Hoppe 1995).

Hülsmann (2003) has proposed yet another two such laws[35]:

- higher savings make higher consumption possible in the future and vice versa.
- an increase in money supply neither increases nor decreases real wealth a priori (Hülsmann 2003).

The above are typical qualitative laws of economics. For other areas than economics, Popper's technological laws can serve as illustrations. These are of the sort found in praxeology with assumptions ranging in strength from what could be considered axiomatic or experiential truisms of human tendency down to more contingent or situational assumptions. Some examples mentioned by Popper (1944b) are as follows (quotation marks from the original text):

- "You cannot introduce agricultural tariffs and at the same time reduce the cost of living."
- "You cannot, in an industrial society, organize consumers' pressure groups as effectively as you can organize certain producers' pressure groups."
- "You cannot have a centrally planned society with a price system that fulfills the main functions of competitive prices."[36]
- "You cannot introduce a political reform without strengthening the opposing forces, to a degree roughly increasing with the significance of the reform."

[35]Hülsmann (2003) calls these example and others "counterfactual laws of human action" which reflect "the essential relationships that choice brings about between what exists and what could have existed instead". Each action is a choice between limited possibilities and their consequences, and each change in the situation of action changes this range of possibilities, like in the choice between saving and consuming. Based on this, the laws of Praxeology allow a priori pattern predictions in an exact manner, even if we cannot know the exact quantitative results (Hülsmann 2003).

[36]This appears to be a reference to von Mises' (1951) calculation problem as outlined in his book "Socialism".

- "You cannot concentrate all relevant knowledge needed for such tasks as the satisfaction of personal needs, or the utilisation of specialized skill and ability" (Popper 1944b).[37]

Two further examples mentioned by Popper (1959) are:

- "[Y]ou cannot, without increasing productivity, raise the real income of the working population."
- "You cannot have a full employment policy without inflation."

One can also think other examples of qualitative laws from existing social theory, e.g.,

- Behavior is shaped by consequences and associated antecedents (Daniels and Daniels 2006, p. 97).[38]
- The decision to adopt an innovation is affected by its perceived ease of application and benefits (Rogers 2003, Chap. 5).
- Human learning happens not only trough reinforcement of one's own behavior but also the behavior of others (Bandura 2001).

According to such principles as mentioned one can attempt to explain or predict the pattern of action in society, beginning with axioms and assumptions and then moving synthetically toward the social facts in question.

9.4 The Role of Empirical Testing and Forecasting

In the above the rationale for methodological subjectivism, individualism, and dualism have been clarified. The arguments for these principles do not imply that a praxeologist "rejects empirical data as useful for the support of theory when it is reasonably able to support it" and would therefore meet the second criterion of "hard" apriorism. However, the actual position of von Mises on the use of empirical testing has not been discussed in detail in terms of this criterion.

There is no question that von Mises expresses skepticism toward the use of empirical testing in praxeology (Leeson and Boettke 2006). He does this first, by stressing that praxeology is an a priori science (von Mises 1962, p. 39). Further, he states that praxeological "economics is a deductive system derived from an a priori point of departure" (von Mises 2009, p. 110). He additionally holds that sound praxeological reasoning produces theorems that are as incontestable as correct mathematical theorems while also referring "to the reality of action as it appears in life and history" (von Mises 1996, p. 39).

Second, he is opposed to the use of the methods of the natural sciences in the study of purposeful human action, such as is attempted in econometrics, because

[37]This seems to be a reference to von Hayek's (1945) knowledge problem.

[38]Daniels and Daniels (2006, p. 97) state: "The closest thing we have to a behavioral law, as gravity is a physical law, is that behavior is a function of its consequences. Antecedents get their power from the consequences that are associated with them".

"the alleged 'correlations' and 'functions' do not describe anything" constant like the laws of physics and are just historical particulars. Therefore, he argues, "[a]s a method of economic analysis econometrics is a childish play with figures that does not contribute anything to the elucidation of the problems of economic reality" (von Mises 1962, p. 63).[39]

Some scholars hold, based on such statements, that von Mises was wholly against the use of empirical testing in praxeology (De Soto 1998). For example, historian of the methodology of economics Blaug (2006, p. 81) claims that von Mises is against even the empirical verification of assumptions. Moreover, Patrick O'Sullivan, who is quite sympathetic to subjectivism, states:

> von Mises is perhaps the strongest proponent of all of extreme[40] apriorism. In the first four chapters of his Human Action he puts forward a number of arguments in defense of apriorism and leaves us in no doubt that for him empirical testing has no place in the interpretive human sciences. (O'Sullivan 1987, p. 158)

If this is true, then Misesian praxeology would indeed be a form of hard apriorism and would need to evolve based on the criteria of our discussion. After all, it has been argued previously that dualism only implies that one does not expect to discover quantitative laws. It does not in principle reject empirical testing of assumptions for practical purposes, especially those confined to a particular situation under study. However, before suggesting how praxeology should supposedly evolve it is seen as appropriate to first fully clarify von Mises' exact position on empirical testing. After that an argument is presented for what role it should have without violating praxeology's essential characteristics. The highlights of the below argument can be seen as part of the overall argument for the reasonability of praxeology as shown in Fig. 9.6.

9.4.1 von Mises' Rejection of Empirical Research

First, it should be noted that von Mises considers that the category of action, the paradigm of preference-means-ends, is not subject to empirical testing at all. In the words of von Mises

> Some authors have raised the rather shallow question how a praxeologist would react to an experience[41] contradicting theorems of his aprioristic doctrine. The answer is: in the same way in which a mathematician will react to the "experience" that there is no difference

[39]He is not alone in this, Karl Popper makes a similar statement that statistics show trends and tendencies which are existential historical statements and not laws (Popper 1945).

[40]Moderate apriorism, on the other hand, proposes only that "in the human sciences empirical testing can only tell us whether or not a theory is applicable to some currently prevailing (or past) situation," because human values and goals evolve (O'Sullivan 1987, p. 157).

[41]It should be noted that in the terminology of von Mises, the term "experience" is equivalent to "empirical data". For example, he says, "[e]mpiricism proclaims that experience is the only source of human knowledge" (von Mises 1962, p. 27).

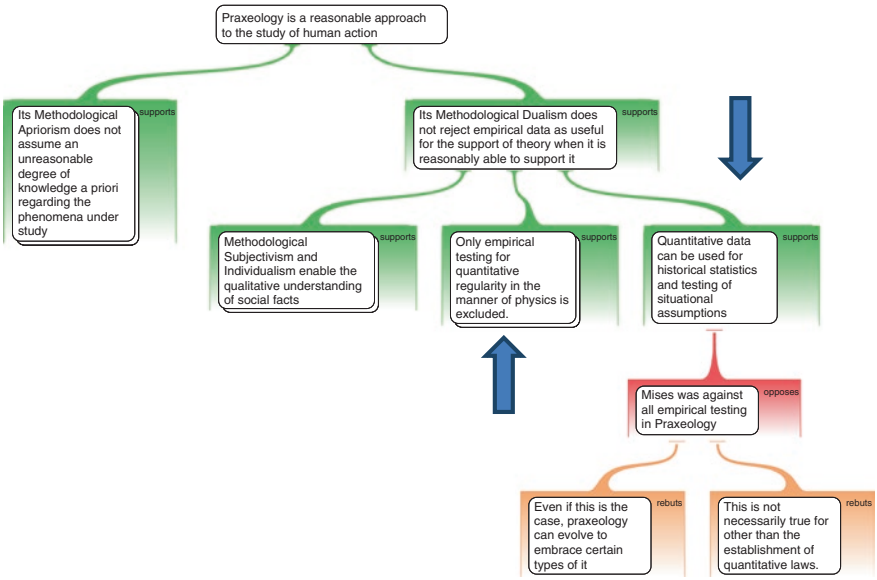

Fig. 9.6 How the praxeological approach to accepting empirical data is part of the argument that praxeology's apriorism is soft. *Source* Tonsberg (2015). *Note* In the argument maps presented in this book, green boxes signify supporting reasons to the boxes they are directly linked to above them in the hierarchy, while red signify counterarguments, and orange rebuts to counterarguments

> between two apples and seven apples or a logician to the "experience" that A and non-A are identical. Experience concerning human action presupposes the category of human action and all that derives from it. If one does not refer to the system of the praxeological a priori, one must not and cannot talk of action, but merely of events that are to be described in terms of the natural sciences. Awareness of the problems with which the sciences of human action are concerned is conditioned by familiarity with the a priori categories of Praxeology. (von Mises 1962, p. 42)

The category of human action is the notion that whenever there is purposeful human action, there is perceived dissatisfaction, ends and means, along with the passage of time, and uncertain outcomes.[42]

[42]A full elucidation of these will be made later, but they may be summarized as follows: "Individual human beings exist. Moreover, they do not simply "move," as do unmotivated atoms or molecules; they act, that is, they have goals and they make choices of means to attain their goals. They order their values or ends in a hierarchy according to whether they attribute greater or lesser importance to them; and they have what they believe is technological knowledge to achieve their goals. All of this action must also take place through time and in a certain space. It is on this basic and evident axiom of human action that the entire structure of praxeological economic theory is built" (Rothbard 1979).

Second, von Mises' attitude toward empirical data is that it cannot prove or disprove a praxeological theorem in the manner of the natural sciences, namely by laboratory experiments. This is because of the complexity of interaction, which imply that "any experience in the field of human action is specifically historical experience, i.e., the experience of complex phenomena, which can never falsify any theorem in the way a laboratory experiment can do with regard to the statements of the natural sciences" (von Mises 1962, p. 42).

Third, von Mises sees the role of economics as one of assessing arguments for and against government intervention (von Mises 2007, pp. 28–29). It is not concerned with the market forecasts done by businesses, and modern governments. Such activities he dismisses as "not economics," but rather the study of the "economic history of the recent past" (von Mises 1962, p. 74).[43]

Fourth, it is important to understand that von Mises' position on theory is that "[t]he concept of theory, in contradistinction to the concept of history, is, and always and universally has been, understood as involving a regularity valid for the future as well as the past" (von Mises 2002, p. lxxv). To von Mises then, *economic theory is about universal regularity*.[44] Accordingly, probability calculations based on regression analysis of past experience are irrelevant, because all such procedures only reflect unique historical data points (von Mises 2002, p. lxvii).

Nevertheless, although von Mises denies that forecasting is economics and that empirical evidence can build economic theory as he defines it, he does not deny that in a similar social setting one might observe similar results. Moreover, he does not reject the use of forecasting models absolutely and for all purposes. On the contrary, von Mises (1996, p. 872) holds that "it renders some services in assembling and interpreting the available data about economic trends and developments," to aid decision-making. He even states that such forecasts involve situational applications of praxeological theorems in the form of trying to grasp what is going on in the minds of relevant individuals (von Mises 1996, p. 118). Accordingly, even if forecasting is not part of *economics* or appropriate for testing quantitative social laws, it can still be part of *praxeological* research.

[43]His ongoing argument is that since the future is uncertain, and preferences change all the time, such appraisals are most effectively left to entrepreneurs, who serve the consumer by continuously appraising shifts in demand. Government intervention based on past experience, i.e. forecasting, will hamper changes needed due to changes in demand and saving. In other words, governments cannot serve the consumers better than entrepreneurs, and econometrics for forecasting is merely a tool of entrepreneurial business activity that if cleverly used, may improve appraisal activities. It is not an effective tool for determining government policy, because it is based on conjecture, not constant regularity. This view on forecasting may be noted to stands in sharp contrast to Milton Friedman's "positive economics," which has the purpose to "make correct predictions" of events (Friedman 1984).

[44]This position of von Mises regarding theory can be understood in light of his overarching mission of establishing solid arguments in defense of capitalism. He was not interested in data that could be interpreted in several ways and therefore be easily dismissed by opponents.

9.4.2 von Mises Position on Subsidiary Assumptions

Further to the above, it should be noted that von Mises himself is not entirely clear in his statements regarding the use of empirical evidence. However, von Mises admits that certain assumptions can be tested. The following can be considered as evidence for that:

> Into the chain of praxeological reasoning the praxeologist introduces certain assumptions concerning the conditions of the environment in which an action takes place. Then he tries to find out how these special conditions affect the result to which his reasoning must lead. The question ***whether or not the real conditions of the external world correspond to these assumptions is to be answered by experience***. But if the answer is in affirmative, all the conclusions drawn by logically correct praxeological reasoning strictly describe what is going on in reality (von Mises 1962, pp. 44–45). (emphasis added)

Accordingly, the idea presented by some authors that he considered all of his theories as a priori valid is not exactly true (Radnitzky 1995). von Mises does not reject the use of experience to test assumptions that unlike the categories of action are not proposed to be known a priori. Only if these assumptions are shown true can one say that "all the conclusions drawn by logically correct praxeological reasoning strictly describe what is going on in reality" (von Mises 1962, p. 45). Hence, Praxeology is not a completely abstract science like mathematics (David Gordon 1994).

Such assumptions may be of obvious empirical certainty, like that of limited time before death[45] or that of positive time preference[46] and perhaps the disutility of labor.[47] However, even all of von Mises own empirical assumptions are at the level of "we are all going to die." In his business cycle theory he explicitly admitted that the assumed tendency of entrepreneurs to be thrown off in their speculations by credit expansion and thus misallocated is something that could change in the future: states regarding this assumption:

> It may be that businessmen will in the future react to credit expansion in a manner other than they have in the past. It may be that they will avoid using for an expansion of their operations the easy money available because they will keep in mind the inevitable end of the boom. Some signs forebode such a change. But it is too early to make a definite statement. (von Mises 1996, p. 797)

The full consequence of this statement seems to be that it is fully acceptable to embrace empirical findings for their employment as assumptions in praxeological

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[45]"The fact that the passage of time is one of the conditions under which action takes place is established empirically and not a priori" (von Mises 2002, p. 25).

[46]von Mises (2002, p. 25) defends positive time preference by saying that "[n]o mode of action can be thought of in which satisfaction within a nearer period of the future is not—other things being equal—preferred to that in a later period".

[47]von Mises says: "The disutility of labor is not of a categorical and aprioristic character…. But the real world is conditioned by the disutility of labor. Only theorems based on the assumption that labor is a source of uneasiness are applicable for the comprehension of what is going on in this world" (von Mises 1996, p. 65).

theorems. Indeed, von Hayek states that while social theories cannot be verified by controlled experiment, "they might be disproved by the observation of events which according to one's theory are impossible" (von Hayek 1942).

It may accordingly be argued that praxeology is open to the use of empirical data for other than mere historical purposes and can play a role in theory building, even if it is only for more situational theories such as those employed in forecasting. This may appear to be in contradiction with some of what von Mises' has said about economics. However, it is consistent with what von Mises says about Praxeology employing empirical assumptions that need to be verified by experience, i.e. those that are not a priori categories of action.

9.4.3 Evolving the Role of Empirical Data in Theory Development

However, it may accordingly be argued that if empirical research is admitted for assumptions, then it would seem arbitrary to reject experiments in human action like those of experimental economics. Indeed, Nobel Laureate Smith (1999) has expressed the opinion that von Mises' rejection of such experiments was because this was almost a universally held view in his time, and that "almost no one tried or cared." Since then many experiments have according to Smith (1994) demonstrated that groups of traders consistently achieve efficient market outcomes[48] without "complete information and cognitively rational actors," and this was previously rarely believed "outside the Austrian and Chicago traditions." Further, while such experiments may not prove universal regularity, they could be seen as demonstrations that have an important psychological effect in the sense of "seeing is believing."

In spite of this, some Misesian economists claim that experiments are harmful since they can be manipulated or misrepresented to support special interests. Moreover, they can often be interpreted in many different ways (Frank Shostak 2002). Indeed, irreplaceability, poor research design, questionable practices due

[48]Smith (1999) states: "What we learn from such experiments is that any group of people can walk into a room, be incentivized with a well-defined private economic environment, have the rules of the oral double auction explained to them for the first time, and they can make a market that usually converges to a competitive equilibrium, and is 100 % efficient—they maximize the gains from exchange—within two or three repetitions of a trading period. Yet knowledge is dispersed, with no participant informed of market supply and demand, or even understanding what that means. This strikingly demonstrates what Adam Smith called ''a certain propensity in human nature … to truck, barter, and exchange one thing for another'' (Smith [1776] 1909: 19). Also, it demonstrates von Mises' assertion that ''Everybody acts on his own behalf; but everybody's actions aim at the satisfaction of other people's needs as well as at the satisfaction of his own. Everybody in acting serves his fellow citizens'' (M, p. 257)".

publication bias,[49] misinterpretation of data and even fraud are recognized problems in social psychology (Ferguson and Heene 2012; Krawczyk 2008; Makel et al. 2012; Pashler and Wagenmakers 2012). For example, the p-value is the most common measure of statistical significance, and yet many practitioners do not understand its exact meaning. Moreover, the practical significance of the p-value itself is quite controversial among statisticians, not the least for use with ordinal data such as those of Likert scales (Carver 1978; Cohen 1994; Gill 1999; Jamieson et al. 2004; Johansson 2011; Rozeboom 1960).[50]

However, such problems are even present in more traditional empirical fields, like medicine and neuroscience (Begley and Ellis 2012; Ioannidis 2005; Marcus 2012a, b, c; Nakagawa and Cuthill 2007). Moreover, experiments are a mainstream activity in social science and hard apriorism is rare. Consequently, rejecting experiments may appear eccentric and make one less able to influence scientific debate or apply Praxeology in new areas of social science. In fact, it could be argued that the failure to realize the acceptability and importance of empirical data has contributed to the fact that von Mises' Praxeology has not developed much beyond his work up until the present day. After all, there is only so much one can do if one thinks that Praxeology implies an absolute rejection of empirical data for theory development (Oprea and Powell 2010).

In any case, once it is admitted that von Mises used empirically based assumptions it follows that they could come from more formal empirical research. It would seem arbitrary to require them to be based only on "common knowledge" like the disutility of labor. There are two reasons for this. First of all, what constitutes "common knowledge" or "self-evident" experiential facts can easily become disputable. Second, once the inherent quantitative irregularity of social facts is recognized there is little danger in employing research-based assumptions.

Rather than avoiding experiments as a whole, it would seem that participating in experiments *on the background of a firm Praxeological understanding of their meaning and implications* is a contribution in the right direction. For example, from the famous marshmallow experiment of Mischel et al. (1972) it has been concluded that children who delayed eating a marshmallow for the promise of reward have greater self-control. Indeed, correlation was found between the results of this experiment and measures of success later in life, like educational performance and coping with stress (Mischel et al. 1989). However, later experiments have correlated delay of marshmallow gratification to the reliability of the

[49]Only statistically significant results are usually reported in journals. This has damaging effects. First, it gives the impression that the relationship is stronger than it is. For example if one study with a significant result gets published it gives the impression that the relationship is potentially important. However, there may be another 20 studies that show no significant result that never were published. Second, it encourages manipulation of data and reporting (Krawczyk 2008).

[50]Likert scale tests are often analyzed by calculating the means, standard deviation and various inferential statistics, but these are inappropriate for ordinal data, because the "average of 'fair' and 'good' is not 'fair-and-a-half'; this is true even when one assigns integers to represent 'fair' and 'good'!" (Jamieson et al. 2004).

environment; children in less reliable situations would prefer shorter wait times (Kidd et al. 2013). Indeed, McGuire and Kable (2013) showed that certain temporal beliefs lead to a negative correlation between waiting time and expected delay, which means that it would be quite "rational" to limit the delay of gratification. However, such observations could have been made much sooner with an awareness of praxeological a priori categories of action that are discussed in the next section. After all, these categories state among other things that action is always taken under uncertainty and is always subjected to a subjectively evaluated choice between now and later.

Moreover, the view on empirical data changes if one considers praxeology as the field of studying human action in general or accepts a more liberal definition of economics than that of von Mises.[51] For example, behavioral economic experiments usually aim more at understanding human action in exchange or game like situations than at national economic policy formulation. Such experiments can be useful in testing assumptions of situational theories and establishing situational tendencies. They can also be useful for comparing and evaluating situational settings, rules, policies, and their design as was stated by Popper (1944b) to be the role of social science. This is important because institutional design affects information states and incentives that again affect action and thereby social and economic outcome (Coleman 1986; Smith 1994).

In particular, the praxeologist needs to make assumptions regarding how actors respond to changes in the world around them with purposeful action. These would come from empirical fields like behavioral economics and goal psychology, along with the psychology of problem solving, motivation and learning. For example, Kahneman has detected a number of common errors or biases in judgment due to reliance on thinking that is "fast, automatic, effortless, associative,… often emotionally charged;… [and] governed by habit" (Kahneman 2003). Presumably, such findings may turn out to have important implications for design of organizational structure, processes, policies, as well as, information, and communication systems. Indeed, behavioral economists Richard H. Thaler has coined the term "choice architecture" for manipulating preferences in his book "Nudge" and there is a call for more experimental research in business studies (Nobel 2011; Thaler and Sunstein 2008).

[51]As mentioned earlier, to von Mises economics is the narrow field of establishing universal economic laws. This can be understood in light of his overarching mission of establishing solid arguments in defense of free markets. He was not interested in data that could be interpreted in several ways and therefore be easily dismissed by opponents. This restrictive conception of the field of economics leaves little role for the use of empirical data coming from complex social situations.

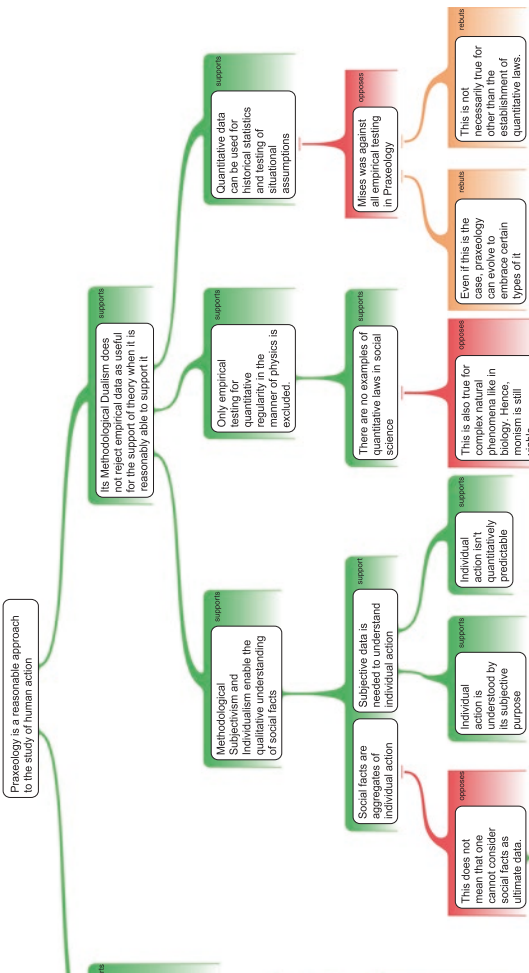

Fig. 9.7 Arguments for praxeology as a reasonable aprioristic approach to human action. *Source* Tonsberg (2015)

Accordingly, it may be concluded that empirical testing is consistent with praxeology as long as

1. Theory construction follows the deductive procedure prescribed by von Mises based on the categories of action, and;
2. The lack of quantitative regularity in human action is kept in mind when interpreting and designing empirical research.[52]

The first condition aims to preserve apriorism, while the second represents dualism. In this way, Praxeology's position toward empirical data remains more fully pragmatic and is not rejecting data unreasonably. Accordingly, it meets the reasonability criteria stated earlier for an apriorism that is not hard and scientifically dogmatic.

It has been argued in this section that human action science needs to adhere to subjectivism and individualism, and that it cannot discover quantitatively constant relations. Hence, empirical data are always situational and social science theories can only be deductive models for understanding based on a priori statements. However, this does not preclude experimental research related to empirical assumptions. Based on this it may be concluded that Praxeology is not a form of hard apriorism as it does not meet any of its two criteria set forth earlier. The essential points of this argument have been summarized in the argument map in Fig. 9.7.

It remains to be explained in more practical terms how praxeology proceeds to deduce theorems and qualitative predictions from a priori axioms and empirical assumptions. This begins with explaining the categories of human action, which provide the fundamental qualitative elements in the explanation of action phenomena, and serve as the basic building blocks of praxeological theorems. These are discussed next.

[52]In interpreting results of studies on human behavioral tendencies it makes sense to remember what Knight (1925) already long ago pointed out as a fundamental problem of empirical data in social science. He called attention to the fact that the observed are human beings with interests, just like the researchers. That is, both parties are subjects and observers as well as controllers and controlled all at the same time. Research results of such studies should therefore be carefully considered from the viewpoint of praxeological interpretive understanding along with all the problems associated with empirical data related to human action as mentioned in the discussion on methodological dualism.

Chapter 10
The Theory of Human Action, Its A Priori Categories and Assumptions

As discussed, Praxeology dictates that in explaining human action one is concerned about its "why", as illustrated by the words of Aristotle:

> The end, i.e. that for the sake of which a thing is; e.g. health is the cause of walking. For 'Why does one walk?' we say; 'that one may be healthy'; and in speaking thus we think we have given the cause (Aristotle, n.d.-a, p. Book V, Part 2).

Hence, subjective experiences of meaning become primary objects of study (von Mises 1996, p. 92). Some of these are held by Mises to be implied in all purposeful action, viz., the a priori categories of action. The elucidation of all of these is crucial to Praxeology and its primary step. This is not only because it is a deductive a priori science that seeks to discover hidden implications. It is also because it serves to elaborate on what human action entails and therefore what must be taken into account if a theory is to be considered a theory of human action, and not one of, e.g., profit maximizing automatons (Leeson and Boettke 2006).

The emphasis on these categories is the most unique aspect of Praxeology as an approach to social science. For this reason they are discussed in detail in this chapter, beginning with the subjective theory of value, and progressing to:

- The prerequisites of action, such as dissatisfaction, goal image, hope, and regularity;
- Ends and means and associated concepts like exchange, goods, capital, the role of entrepreneurship, production, wealth, cost, profit and loss;
- Time duration, time preference, and the role of time in higher order goods;
- Uncertainty, speculation, probability, and the role of folk psychology and history.

The main task is to clarify these concepts and resolve any conceptual obfuscations in order to facilitate their application to any desired field, such as leadership in the case of this work. Moreover, at the end of this discussion the concept of purposeful action itself is elucidated in terms of its relationship to rationality assumptions,

T.A. Tonsberg and J.S. Henderson, *Understanding Leadership in Complex Systems*,
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as well as unconscious and habitual behavior. This clarification culminates in an argument for an addition to Mises' a priori categories: the a priori of action cues. Several reasons are mentioned for why all action has a cued element, one of them being that there needs to be a trigger that signifies that it is time to take action *x* and distinguishes it from situations of nonaction with respect to *x*.

10.1 The A Priori Subjective Theory of Value

Preference is necessarily implied in all purposeful action, since it involves choice. This implication is the premise for the tool used in praxeology to interpret preferences, namely, the Subjective Theory of Value (STV). Its rationale is that as actors, we know that we do perceive some situations as more or less desirable, more or less evil. That is, valuation is a matter of a subject comparing one object or situation with another object or situation, and ranking these as higher or lower in value. Accordingly, action always involves renouncing what has lower rank in order to keep or attain that of higher rank; what one chooses to do or not do is what one prefers at the moment, even if it is the lesser of two evils. For example, one may renounce an amount of leisure as a means to gain the product of an amount of labor. In this case the product to be gained is judged to be of higher value rank than the leisure being sacrificed at the moment of choice (von Mises 2007, pp. 24–25).

This means that the STV discards any notion of values being intrinsic to "goods". Moreover, it implies that there is no absolute psychological scale of valuation (Hülsmann 1999; von Mises 2007, p. 23). Rather all human decisions involve choosing ends and means as well as leaving and setting aside according to a subjective ordinal scale[1]:

> All ends and all means, both material and ideal issues, the sublime and the base, the noble and the ignoble, are ranged in a single row and subjected to a decision which picks out one thing and sets aside another (von Mises 1996, p. 3).

An important corollary of this ordinality is the impossibility of measuring values in countable units, such as utils[2] in utility theory.

The SVT provides one unified concept of value that is valid for all purposeful action. However, it is a subjectivist instrument for understanding action. Its associated ordinal scales of preference have no real and independent existence from actual choices made by real actors (von Mises 1996, p. 95). In other words, it is a mistake to think of them as anything like stable and distinct structures in the minds of human beings (Buchanan 1982). Their relevance and applicability to the life world of an actor is ever changing with every new perspective and situation.

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[1]Interestingly Smith (2003) asserts that laboratory experiments on animals have shown that the intensity of brain activity for a given good varies according to what it is being compared to. This suggests that values are on a relative scale even for animals.

[2]Utils are fictitious cardinal numerical unit that represent pleasure or pain and serve as the basis for drawing demand curves (Barnett 2003).

10.2 The Prerequisites of Action

Some of the categories of action are considered as prerequisites. They are the conditions that must be present for action to take place and are identified as dissatisfaction, an image of a better state, hope, and regularity. These categories are discussed first below.

10.2.1 The Prerequisite of Dissatisfaction

Mises holds that dissatisfaction or psychic felt uneasiness is a prerequisite category of action; action is inconceivable without it.[3] He states:

> There is only one motive that determines all the actions of all men, viz., to remove, directly or indirectly, as much as possible any uneasiness felt (von Mises 1962, p. 76).

This is the "fundamental category of human action" being the explanation of why one thing is preferred over another (von Mises 1996, p. 833). I.e., if a man decides to engage in an activity he must have preferred it for some reason. This reason is generalized as the pursuit of reducing felt uneasiness based on "a state of dissatisfaction, on the one hand, and, on the other, the possibility of removing or alleviating it by taking action" (von Mises 2002, p. 25).

It should be noted that the state of psychic felt uneasiness concerns "expected future conditions," because "action can influence only the future, never the present that with every infinitesimal fraction of a second sinks down into the past" (von Mises 1996, p. 100). However, it should be also noted that a human being that remains purposely as he is when he also believes that there are alternatives, would be in action because "omitting to do what possibly could be done" is an action.[4] (von Mises 1996, p. 13). The time he remains in this action becomes its duration (von Mises 1996, p. 100).

The preceding is arguable the best formulation of the concept of "felt uneasiness" and the one most compatible with all that Mises labels as human action. According to the above even a person with a philosophy of life that denies that

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[3]There seems to be an Aristotelean influence behind this idea, as Aristotle stated: That which moves therefore is a single faculty and the faculty of appetite… mind is never found producing movement without appetite (for wish is a form of appetite; and when movement is produced according to calculation it is also according to wish), but appetite can originate movement contrary to calculation, for desire is a form of appetite. Now mind is always right, but appetite and imagination may be either right or wrong. That is why, though in any case it is the object of appetite which originates movement, this object may be either the real or the apparent good (Aristotle 2001, Chap. 10) (emphasis added).

[4]Human beings cannot conceive of a state that could not be imagined as being better or worse. I.e. there is no known purely *logical* limit for a maximum level of happiness that cannot be surpassed. If such is the general state of conscious human beings then there is a certain level of relative satisfaction or dissatisfaction associated with any state one finds oneself in.

the proactive pursuit of worldly activity can make life more tolerable would be an actor. Yet Mises seems to imply that he is not, commenting in the context of mentioning ascetic philosophies that Praxeology does not deal with men "reduced to a mere vegetative existence" (von Mises 1996, p. 29).

This claim about ascetics raises a problem, because it seems incompatible with his claim that "the absence of any stimulus to change or act belong properly to a perfect being. This, however, is *beyond the power of the human mind to conceive*" (von Mises 2002, p. 25) (emphasis added). It also seems incompatible with his claim that any behavior that is subject to change by human volition is action, including the choice to remain passive (von Mises 1990c, p. 19).[5]

After all, an ascetic abstains from pursuing worldly pleasures by *choosing to disobey* various desires and urges. In fact, such an act of abstinence is a strong case of human action by being characterized by will and conscious decision making of a higher degree than merely striving for material well-being. After all, there are two basic approaches to the desire for satisfaction from the world. One is to pursue it, while another is to work against it to reduce the felt uneasiness that drives it and thereby achieve a sense of freedom from the constant urge to react to the world. It is in a sense a pursuit of pain reduction, as having to toil to fulfill needs can be seen as a form of pain. Accordingly, ascetic behavior cannot be excluded from human action without causing significant conceptual difficulties and should therefore be considered as part of it.

In addition to the claim about "vegetative man," a further *apparent* anomaly is that at times Mises strongly implies that action is only about change[6]:

> Acting man is eager to substitute a more satisfactory state of affairs for a less satisfactory… A man perfectly content with the state of his affairs would have no incentive to change things. He would have neither wishes nor desires; he would be perfectly happy. He would not act; he would simply live free from care (von Mises 1996, pp. 13–14).

This and similar statements may seem at first difficult to reconcile with the notion that action includes all behavior that is changeable by volition, which would include both habitual behavior and leaving be. However, one needs to look at all that is mentioned by Mises on what he conceives as action in a *gestalt* fashion as his statements are not always clearly consistent.[7] For this case a more suitable conceptualization of "felt uneasiness" as a prerequisite of action is as mentioned previously; namely that a person is always in a state with an associated level of satisfaction or felt uneasiness in this world, and that remaining in a habit is to remain in the action of that habit as an act. It is staying the course.

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[5]This is discussed further below.

[6]Mises often speaks of action as intervention or change in way that seems to preclude the act of leaving be, even though he has explicitly stated that leaving be is action. The reason for this apparent anomaly is perhaps that he is primarily concerned with praxeological economics, where initiative and entrepreneurship is a main concern.

[7]There are more examples of this. For example, Mises' statement that the limitations of the mind "makes thinking itself an action" appears hard to reconcile with "[i]t is not the scope of Praxeology to investigate the relation of thinking and acting" (von Mises 1996, p. 99, p. 25).

10.2.2 The Prerequisite of an Image of a Better State (Goal Image)

In addition to feeling uneasy about the future, purpose implies an end that is specified at some minimum level. The argument for this is that one cannot be consciously aware of a purpose of action without having imagined such a purpose at all. As stated by Schuetz:

> Indeed, we cannot find out which of the alternatives will lead to the desired end without imagining this act as already accomplished. So we have to place ourselves mentally in a future state of affairs which we consider as already realised, though to realise it would be the end of our contemplated action. Only by considering the act as accomplished can we judge whether the contemplated means of bringing it about are appropriate or not, or whether the end to be realised accommodates itself to the general plan of our life (Schuetz 1943).

Accordingly, in order for there to be human action there must be an actor with an "image of a more satisfactory state" (von Mises 1996, p. 14). What happens is that an actor in light of felt uneasiness "imagines conditions which suit him better, and his action aims at bringing about this desired state" (von Mises 1996, p. 13). A corollary of this is that imagination itself is also a prerequisite of action, even though apparently Mises did not emphasize this. However, it can be an important notion in connection with the issue of entrepreneurship as will be argued later.

10.2.3 The Prerequisite of Belief in Non-futility of Action (Expectation/Hope)

Mises further points out that dissatisfaction and an image of a better future state is not enough for action to happen. There must also be some element of hope:

> [T]o make a man act, uneasiness and the image of a more satisfactory state alone are not sufficient. A third condition is required: the expectation that purposeful behavior has the power to remove or at least to alleviate the felt uneasiness. In the absence of this condition no action is feasible. Man must yield to the inevitable. He must submit to destiny (von Mises 1996, p. 14).

It is noteworthy that the category of hope is not exactly the same as subjective probability of expectations. These are related concepts, but not the same. Hope is simply the opposite of complete despair.

Note that with regard to the person who chooses to do nothing, the notions of imagining a better state of reduced felt uneasiness and hoping that action will achieve it, are still relevant. This is in the sense that the actor has not *imagined* himself better off by any available change. Hence, he remains in the state he is in. He *hopes* that remaining will *still* bring him the least felt uneasiness. Therefore, he sticks to his original decision of doing nothing or to the state that he found himself when becoming conscious; *he remains in the state of that action*. In this way a person that chooses to not do anything about his state is engaging in action by fulfilling the three prerequisites of felt uneasiness, goal image and hope.

10.2.4 The Category of Regularity as a Corollary of Expectation and Imagination

Another note to make here is that hope and, to a certain extent, goal image require regularity because they are linked to the choice of means, and means to ends imply cause and effect. In this sense regularity is another prerequisite of action (von Mises 1996, p. 22). This is an a priori shared with the natural sciences:

> If there were no regularity, nothing could be learned from experience. In proclaiming experience as the main instrument of acquiring knowledge, empiricism implicitly acknowledges the principles of regularity and causality (von Mises 1962, p. 21).

Thus, one cannot meaningfully intervene in the world without any notion of how things regularly relate. E.g. without being able to expect friction on roads it would not be possible to drive or even move on them at all.

Of course, regularity in general is not only about the physical aspects of the world. There are also intersubjective expectations of a teleological nature. For example, from an action norm perspective, the person who decides to ignore a deadline might expect it will not cause him too much trouble at work.

10.2.5 The Subjectivity of the Prerequisites of Action

Again it should be stressed that uneasiness, goal image and hope are matters of completely subjective perception and judgment. Even an act of emotional judgment or an instinctive urge is an attempt to reduce felt uneasiness, in spite of it involving disarranged scales of valuations.

> The ultimate goal of human action is always the satisfaction of the acting man's desire. There is no standard of greater or lesser satisfaction other than individual judgments of value, different for various people and for the same people at various times (von Mises 1996, p. 14).

Accordingly, even impulsive behavior with great disadvantages is action, because it involves deciding "in favor of yielding to the desire concerned." For this reason man is not always acting optimally. If a person ignores the alarm clock in the morning in spite of becoming late for work and risking his job, it is not necessarily because he expects to be better off by being fired than by sleeping. Rather, he may simply be choosing between the pain of getting up and the pleasure of sleeping at a highly emotional level. At the moment, the prospect of being fired does not make him feel dissatisfied enough to get moving, but it is still human action involving felt uneasiness, imagining future states, and belief in the reduction of felt uneasiness through the action chosen. The notion of rationality in action will be discussed further below.

10.3 Ends and Means

The core logic of a human act is the employment of whatever one considers a means in order to remedy a felt uneasiness, a disturbed state, a satisfaction of some need, be it sensory or ideological. Action is inconceivable without such an end, goal, object of need, or "image of a more satisfactory state" in mind and is therefore a category of action just as the conceived means for getting it (von Mises 1996, p. 14).

Means are whatever one believes to be helpful for whatever one aims at; they are objects of meaning as pertains to their conceived employment in action even if they are the wrong choice. That is, "[a]n end is everything which men aim at. A means is everything which acting men consider as such" (von Mises 1996, pp. 92–93). Accordingly it may be that "the same things are ends to some people, means to others" (von Mises 2007, p. 37).

However, Praxeology does not concern itself with the ultimate goals[8] of human activity, i.e. values in themselves or psychological drives, but "with the means applied for the attainment of any ends" (von Mises 1990c, p. 21). For example, by convention in the praxeological branch of economics, the "differentiation of means and ends… becomes a differentiation of acquisition and consumption" (von Mises 1996, p. 260). Thus, closely related to the notion of means and ends are the notions of exchange, goods, capital, wealth, cost, gain and loss. These are discussed next.

10.3.1 Action as Exchange

Action involves choice between incompatible means and ends and is not mere preference or wishing or hoping[9] without engaging in the volitional exchange at some level. Rather, action "always involves both taking and renunciation" even if it is

[8]It is customary to name as ends all "those means that are fit to produce satisfaction directly and immediately" (von Mises 2007, p. 13). "Strictly speaking," however, "only the increase of satisfaction (decrease of uneasiness) should be called end, and accordingly all states which bring about such an increase means" (von Mises 1990, p. 21). The supreme ultimate end is always satisfaction in the formal sense, in terms of whatever the individual values, while all other things and states of affairs are, again strictly speaking, merely means (von Mises 2007, p. 13). A statement such as, "the sole aim of this person is to accumulate wealth," actually means that he sees it as the only means of satisfaction (von Mises 1990, p. 22). That is, the satisfaction from it would be the ultimate and highest end. Intermediary ends are to the highest end merely means that can be judged in terms of suitability to that highest end. In contrast, the highest end is a purely individual value judgment (von Mises 1990, p. 23).

[9]Mises (1996, p. 12) states: "To express wishes and hopes and to announce planned action may be forms of action in so far as they aim in themselves at the realization of a certain purpose. But they must not be confused with the actions to which they refer".

just the decision of taking one path rather than another (von Mises 1996, p. 12). If the exchange does not involve cooperation with others, then Mises calls this "autistic exchange"[10] (von Mises 1996, p. 97). Such exchange implies again an ordinal scale of subjective valuation by which one makes choices, which is the basis for the subjective theory of value already discussed.

10.3.2 Goods

Mises states that means are always "scarce with regard to the services for which man wants to use them" and that if they are not, then "there would not be any action with regard to them" (von Mises 1996, p. 93). He even goes as far as to claim that free goods are "not the object of any action," as they are not scarce and therefore not in need of being economized. However, this is inconsistent with the universal notion of acting with purpose since there is no question that people use free goods as means for their purposes, such as enjoying a swim in the sea. Accordingly, scarcity is a prerequisite for market exchange but it is not a condition for all action, so Praxeology should not be restricted to what concerns scarce means. It may be that Mises when using the words Praxeology and action often has praxeological economics in mind, and not universal Praxeology.

In light of this, a more useful conceptualization of goods as pertains to Praxeology in general is that mentioned by Menger (2007, p. 52):

> Things that can be placed in a causal connection with the satisfaction of human needs we term useful things.[11] If, however, we both recognize this causal connection, and have the power actually to direct the useful things to the satisfaction of our needs, we call them goods.

This directing to the satisfaction of our needs is of course nothing less than human action, whether the "useful thing" is freely available or not. Hence, it is enough for something to be considered a good if the actor believes two things regarding it:

1. it has a causal relation to satisfaction, and;
2. it is directable towards this satisfaction (Menger 2007, p. 52).

[10]Just as we speak of autistic exchange involving one person, we will need to deal with cooperative exchange in leadership since leaders get useful actions from followers for something considered valuable by the followers.

[11]This is the editor's translation of the German "Nützlichkeiten" from Menger's original work. Google translates this term into English as "utilities" but into Norwegian as "means". This underscores the point that goods in Menger's view is not simply physical goods as would otherwise be understood by the common usage of the English term.

Importantly, these two conditions allow for the consideration of intangibles like ideas, norms and institutional phenomena as goods.[12] However, it is a matter of experience or science to sort out whether something satisfies these two requirements in actual reality (Menger 2007, p. 52).

10.3.3 The Subjective Theory of Capital and Production

Consistent with the subjective theory of value, Mises points out that the notion of capital is a mental phenomenon of understanding:

> There is in nature nothing which corresponds to the terms capital or income… it is the intention of the individuals or of acting groups which makes some goods capital and others income (von Mises 2008b).

Accordingly, the "modern [subjective] theory of value and prices" distinguishes "between goods of higher and of lower orders, between producers' goods and consumers' goods" and "is not based on the classification of the factors of production as land, capital, and labor" or any notion of intrinsic value (von Mises 1996, p. 636).

von Mises (1996, p. 146) calls goods that are fit to satisfy human wants directly first-order goods. Goods that only satisfy human wants indirectly by being complemented by other goods are higher order goods. Accordingly, a piece of bread is a first-order good for the satisfaction of hunger, while a knife to cut a slice of bread is a second order good for having a slice of bread, and so on.

Hence, the subjective concept of capital is a consequence of the subjective concept of production, which is the "alteration of the given according to the designs of reason" (von Mises 1996, p. 142). Accordingly, higher order goods lose their status as goods by losing their planned connection to lower order goods (Menger 2007, pp. 52–53). They are subjectively perceived means for some sought end and have no intrinsic value; their value is completely derived from the subjective value of consumption sought.[13] Accordingly, higher order goods are acts, ideas or material things perceived as useful and arranged in believed causal order to reach some

[12]Interestingly, Menger had already grasped this importance and stated that "firms, monopolies, copyrights, customer goodwill, and the like, are actually goods" (Menger 2007, p. 55). In fact, Menger went so far as to mention that even the laws of nature can be considered goods when the two abovementioned conditions are met (Menger 2007, p. 55). Importantly, Menger's wide notion of goods implies the applicability of the subjective theory of value and the categories of action to a wide range of phenomena outside economics.

[13]In praxeological economics, the specification and valuation of capital goods is performed by entrepreneurs. They bid on what they see as higher order goods in light of eventual expected consumption and bear the uncertainty of employing factors of production for different time periods (von Mises 1996, p. 332). Past effort and time spent on producing capital goods is irrelevant to their value; their value comes from consumption expected in terms of their relevant first order goods. (von Mises 1996, pp. 488–489) Accordingly, factors of production meant as capital goods are only goods if they are seen as useful means *by the entrepreneur* (Menger 2007, pp. 160–161).

end. They are at different levels according to how far they are removed in logical sequence from the planned removal of felt uneasiness. In this sense, the notion of capital can be applied to Praxeology in general, not only economics.

10.3.4 The Role of Capital in Universal Praxeology

The subjective understanding of the notions of capital and production is of course useful not only in economics, but universally in Praxeology since it is a subjective phenomenon of action and entrepreneurship. The traditional economic classification of capital goods into labor, capital equipment and land[14] can still somehow be used in economics due to the existence of money prices. However, in universal Praxeology the traditional economic notions of production and capital become an overall theory of action planning involving a variety of economic and noneconomic goods. To begin with, skills, knowledge and expertise are very important higher level goods in a field like leadership, as are rights to command other actors to perform tasks, and being able to trust people. Another important category of higher level goods in Praxeology in general are goods associated purely with the nature of one's membership in society, such as personal social networks, as well as social norms and institutions in ones' favor. For example, favors owed are a good of this kind and represents a combination of norms and personal relationships.

Accordingly, to the human actor society can be seen from one perspective as a universal structure of higher and lower levels of goods. Consequently, institutions like a firm or a family are particular structures of higher and lower levels of goods. This is what the subjective theory of value dictates. Moreover, methodological individualism dictates that the meaning of this structure is different for every individual according to his perspective.

Along these lines it might also be said at a very high level of conception that each person possesses a subjective organization of intersubjective and material capital.[15] These two forms of capital are characterized by the uncertainties and

[14]Menger points out that defining capital materially in terms of land, capital and labor for economics is a methodological mistake. He says for example regarding land: "Land occupies no exceptional place among goods. If it is used for consumption purposes (ornamental gardens, hunting grounds, etc.), it is a good of first order. If it is used for the production of other goods, it is, like many others, a good of higher order. Whenever there is a question, therefore, of determining the value of land or the value of the services of land, they are subject to the general laws of the determination of value. If certain pieces of land have the character of goods of higher order, their value is subject also to the laws of value determination of goods of higher order that I have explained…" (Menger 2007, p. 165).

[15]However, attempts to make more detailed universal definitions of human capital, social capital, intellectual capital, and so on should probably be avoided. Rather definitions should be made according to the area of study or problem of interest. This is because these definitional matters are not always straight forward. E.g., social capital has broadly been defined as "an asset embedded in relationships", but this raises the question of how to categorize employment contracts. After all, they can also be seen as human capital (Leana and Van Buren 1999). Moreover, factors

probabilities related to social norms, institutions and natural law. In light of this one can say that every human being is an entrepreneur in that he makes decision on how to employ the higher level goods available to him to achieve his ends in the face of uncertainty.

10.3.5 The Subjective Theory of Wealth

According to the subjective theory of capital, a person's wealth from a universal praxeological perspective is the totality of higher and lower level goods he considers to be at his disposal.[16] This is of course completely subjective and is ultimately derived from the ordinal ranking of preferences people make; the psychic scale of values[17] elucidated in the subjective theory of value and marginal utility as all goods are valued in such a scale.

10.3.6 The Subjective Theory of Cost

Costs are the value attached to the most valuable want-satisfaction which remains unsatisfied by choice. For example:

> The readiness of individuals to overcome the disutility of labor is the outcome of the fact that they prefer the produce of labor to the satisfaction derived from more leisure (von Mises 1996, p. 141).

For Praxeology, all psychic costs are thus opportunity costs. An actor's psychic cost is the alternative want-satisfaction he is implicitly giving up when he makes

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Footnote 15 (continued)
like reputation, social status, formal employment contracts, owed favors, or coercion are simply different particular means that could be used to achieve the same thing, and Praxeology at the universal level is not about particular means but about means in general. Finally, what is capital to some actors is consumption to others. A case in point is "labor". To some physical and mental effort may be a direct source of satisfaction, while for other it is done for religious aims, or to stay out of trouble, not the least to avoid psychological ailments. E.g., it may be a source of joy from seeing progress and success, having overcome some difficulty, appreciating skills or products aesthetically, or some other peculiar appetite or wish (von Mises 1996, pp. 587–590). von Mises (1996, p. 590) states: "Keen discerners of the human soul have always been intent upon enhancing the joy of labor. A great part of the achievements of the organizers and leaders of armies of mercenaries belonged to this field".

[16]This is taken from Menger's (2007, p. 109) definition of property as "the entire sum of goods at a person's command".

[17]However, the actual realization of this wealth only occurs when it is substituted for something that is considered more valuable. In other words, the scales of value rankings "have no independent existence apart from the actual behavior of individuals" (von Mises 1996, p. 95).

his choice.[18] This fact also leads in a logical fashion to the theory of opportunity costs which lies at the heart of most economic considerations.

10.3.7 The Subjective Theory of Profit and Loss

From the subjective theory of value one derives the notion that when a man acts to reduce his felt uneasiness things may or may not happen according to plan and hence the notions of gain, or profit, and loss. Schuetz (1943) states:

> Imagination is always revocable and can be revised again and again. Therefore, in simply rehearsing several projects, I can ascribe to each a different probability of success, but I can never be disappointed by its failure. Like all other anticipations, the rehearsed future action also has gaps which only the performance of the act will fill in. Therefore the actor will only retrospectively see whether his project has stood the test or proved a failure (Schuetz 1943).

Sometimes action leads to less satisfaction than what was there prior to action and represents a psychic loss, while at other times there is a gain in satisfaction more or less as expected, namely a psychic profit (von Mises 1996, 97–98). Accordingly, profit and loss are in the original sense "psychic phenomena and as such not open to measurement and a mode of expression which could convey to other people precise information concerning their intensity" (von Mises 1996, p. 289). They are about the difference between expectation and what is realized. The notion of expectation raises the topic of another category of action besides ends and means, namely time and uncertainty.

10.4 Time as a Category of Action

The phenomenon of time is a corollary of sequential events in the real world, namely the temporal relation of past, now or later of events. von Mises (1996, p. 99) states:

> He who acts distinguishes between the time before the action, the time absorbed by the action, and the time after the action has been finished. He cannot be neutral with regard to the lapse of time.

[18]Some economists claim opportunity cost is "that which might be avoided by not making choice" (Buchanan and Thirlby 1981). However, this statement is paradoxical, because avoiding is in itself is a choice. Rather, deciding not to do something is a choice of avoidance and involves preferring e.g. to rest instead of to engage in some project during time *t*. In such a case the cost of resting is the foregone expected net psychic gain of engaging in the project during *t*.

Accordingly, time is a category of action[19] and any model of choice or motivated behavior needs to include time as a critical component (Steel and König 2006). Indeed, the author of expectancy theory, Vroom (2005) criticized his own original formulation for not taking into account the variability of behavior over time due to saturation and choice between courses of action. In the following the action categories implied by time are elucidated.

10.4.1 Time Duration

Action is always future oriented since the present is past and irreversible as soon as it arrives. However, choice is driven by the expected future degree of psychic felt uneasiness according to different courses of acting. Accordingly, action involves an extended duration considered as being "the present" in the sense that the present offers a certain set of opportunities for choice and that the past represents opportunities lost. Thus, for action the concept of "present qua duration is the continuation of the conditions and opportunities given for acting" under uncertainty and according to ends sought (von Mises 1996, p. 101). As an actor faces opportunities for courses of action, he knows that these are limited windows of opportunity. Different actors will respond differently to these choices in terms of constancy of plans and quickness of alteration (von Mises 1996, pp. 101–104).

In addition to this above notion of the duration of the present, it is also possible to link the categories of action to their implied incidents in time. This can be achieved through the work of Jaques (1998, pp. 112–113) who conceives of four types of incidents that occur in sequence during goal pursuit: felt uneasiness, an image of a better state, elaboration of plans, and working towards goal.[20] From this action perspective of time Jaques developed the concept of the "active present" which he says "is composed of all behavioral episodes in which someone is engaged—all the intention filled trajectories from their beginning to their final end

[19]Although Praxeology is a deductive system of thought, it differs from formal logic and mathematics in that it implies events of cause and effect and therefore time and irreversibility. On the other hand, the elements of logic and mathematics are functional relations, not temporal events (von Mises 1996, p. 99).

[20]Jaques (1998, p. 113) names these stages "behavioral episodes". Felt uneasiness is described by Jaques as experiencing "a lack, in the sense of an episode to be traversed, a goal to be reached, an event to be completed"; An image of a more satisfactory state is described by Jaques as a "goal image", an idea of something that is, or might be, that could mend the sense of lack. This is followed by "orientational and exploratory behavior", which ranges from simple thought to more involved activities in order to form a plan, including the assessment of "*resource objects*; that is to say, resources in the form of things, people, ideas, which exist objectively and which could be used as satisfactory goal objects either as they are or as they might be if suitably transformed". This description by Jaques is of course an elaboration of the stage in which means are conceived of and the belief in the usefulness in action to relieve felt uneasiness is formed; the fourth stage is traversing the path towards the goal, which involves overcoming expected and unexpected obstacles, modifying the plan or even the goal if found necessary, or even abandonment and failure.

state if achieved or to a sense of failure if not achieved." Hence, action can also be viewed as partial or whole in light of the sequential steps involved in plans (von Mises 1996, pp. 45, 100).

10.4.2 Time Preference

Time preference in action is implied by the fact that action always refers to removing felt uneasiness sooner or later[21] (von Mises 1996, pp. 480–483). That is, a man must allocate "some amount of satisfaction in the nearer future to that in the remoter future" or he would never consume goods at all[22] (von Mises 1996, 490). This implied time preference does not necessarily mean that man has a universal preference for now. It means rather that the reality of being in time forces him to prefer some removal of dissatisfaction now as opposed to later. He is compelled to make choices regarding time of such removal. Mises states:

> The case of the miser[23] does not contradict the universal validity of time preference. The miser too, in spending some of his means for a scanty livelihood, prefers some amount of satisfaction in the nearer future to that in the remoter future (von Mises 1996, p. 490).

Hence, one cannot be completely indifferent but must choose and therefore have a preference.

10.4.3 Time and Higher Order Goods

Another aspect of duration pointed out by Menger (2007, pp. 67–71) is that in the employment of higher order goods the time of production cannot be completely

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[21]The notion of time preference as described is of fundamental importance to Misesian economics, because time preference dictates that people have plans for consuming sooner or later, and this means that there is a different value assigned for goods to be consumed later as opposed to earlier. The time element is instrumental in the formation of all prices of all commodities and services (von Mises 1996, p. 493). This means again that a corollary of praxeological time preference is praxeological- or originary interest: "Originary interest is a category of human action. It is operative in any valuation of external things and can never disappear" (von Mises 1996, p. 527). This idea that interest is implied in market interest rates and reflects plans for consumption is important in Mises theory of the business cycle, which will be discussed later as an example of how Praxeological theories are derived.

[22]In this pure sense, it is not only human beings that behave with time preference. However, for man it is not merely instinctive and unstoppable. It is also subject to valuation (von Mises 1996, pp. 480–490).

[23]It should be noted that unlike what has been argued here, some authors understand Mises to hold that time preference is a priori always positive (Block et al. 2006; Gunning 2005c). Entering into a hermeneutical discussion on this issue is beyond the scope of this work. However, the quote on the case of the miser below indicates that Mises does not consider time preference as always positive.

eliminated. Some goods are produced with many steps or in time consuming ways and some have limited duration and quantities. These factors need to be planned for in terms of manipulating the stocks and durability of goods, as well as shortening and lengthening production through planning and technology (von Mises 1996, pp. 481–482). From a planning viewpoint given the level of technology, when an entrepreneur buys a machine "he buys the original factors of production that were expended in producing it plus time, i.e., the time by which his period of production is shortened" (von Mises 1996, p. 493).

Moreover, since higher order goods only have value based on their associated future first-order (consumable) goods, the possession of higher order goods is inherently riskier than possession of consumer goods. There is more uncertainty with respect to the consumable quantity and quality finally available, and this uncertainty varies according to the nature of production and its circumstances:

> Human uncertainty about the quantity and quality of the product (corresponding goods of first order) of the whole causal process is greater the larger the number of elements involved in any way in the production of consumption goods which we either do not understand or over which, even understanding them, we have no control—that is, the larger the number of elements that do not have goods-character[24] (Menger 2007, p. 71).

This brings up to the next category of action emphasized by Mises, namely uncertainty.

10.5 Uncertainty and Speculation

By experience it is known that the actual future as it happens is never fully predictable, only more or less so. Hence, the category of time implies uncertainty as another category of action. Indeed, if the future was certain to an actor in every detail then he would face no choice. This means again that speculation is an a priori of action identified by Mises:

> As action necessarily is directed toward influencing a future state of affairs, even if sometimes only the immediate future of the next instant, it is affected by every incorrectly anticipated change in the data occurring in the period of time between its beginning and the end of the period for which it aimed to provide (period of provision). Thus, the outcome of action is always uncertain. Action is always speculation (von Mises 1996, p. 252).

Of course, speculation implies expectations and notions of probability. Indeed, Lewin (2010f) stressed that individual goals are "determined fundamentally by two factors, namely, by the individual's relation to certain values and by his sense of realism in regard to the probability of reaching the goal." After all, an actor makes his plans, and hopes to change his situation based on expectations on how the world works. Without such expectations, no action aiming for a particular end would be possible (Hoppe 1995).

[24]Goods character is a function of a known and controllable causal relation to human satisfaction.

Uncertainty is caused by ignorance. Accordingly, there is a "need for a process by which knowledge is constantly communicated and acquired" by learning and coordination of actors (von Hayek 1945). Hence, there is a strong connection between knowledge as a resource, and the entrepreneurial *function*[25] in Praxeology, because the role of the latter is to allocate resources. Indeed, entrepreneurship is a corollary of uncertainty as shall be expanded upon later.

Mises proposes that there are three modes of expectation, namely, "gambling, engineering and speculating" (von Mises 1996, p. 112). The first is that of knowing only the frequency of outcomes, and nothing about particular events, or what Mises calls class probability.[26] These are the unpredictable events of life that a person cannot control, and buys insurance policies to protect himself from. The second is the mode of the engineer. He uses current knowledge to solve his technological problems, and builds in safety margins, although he cannot eliminate all elements "of gambling present in human life." The third mode is that of the speculator, who deals with the uncertainties of what other people will do, or case probability.[27]

[25]The entrepreneurial function refers to the aspect of action that concerns the allocation and employment of resources; it is not a person or ideal type.

[26]In class probability "[w]e know or assume to know, with regard to the problem concerned, everything about the behavior of a whole class of events or phenomena" but nothing about singular events except that they are elements of this class (von Mises 1996, pp. 6, 106). After all, in the natural sciences one cannot do more than observe natural phenomena and how they regularly appear; one does not find notions such as gravity in one's consciousness (Rothbard 1979). Mises' ontological position is also that probability has no objective existence in nature, and is therefore part of our mental world due to our lack of knowledge of the real causes of events. In other words, his position is that if all causes were known, then the future could be predicted with certainty. The opposing view is that uncertainty is an actual physical feature of the world as held by his brother Richard von Mises (Crovelli 2010). This latter view was apparently espoused by Popper (1982) as well. However, this issue is ontological rather than praxeological and Mises never makes a universal ontological definition for probability, but merely describes his two subcategories in general (Crovelli 2010). The reason for this omittance may be that Mises writes about philosophical problems to champion Praxeology and defend his economics, and does not usually engage in deep philosophical debates otherwise (Gordon 1994; Storr 2009).

[27]Case probability is for situations where strict regularity is not present and, hence, frequency-based probability does not apply. Rather, one is dealing with situations "which are far too unique, generally speaking, for any sort of statistical tabulation to have any value for guidance" (Knight 2011, p. 117). Case probability deals with non-repeatable problems of human action, such as the outcome of an election (von Mises 1996, p. 111). Instead of frequency-based calculation, pondering case probability involves employing the "specific understanding of the historical sciences," which is always "based on incomplete knowledge," because one misses altogether some of the factors involved, or how they impact the situation (von Mises 1996, p. 112). Accordingly, mathematical language such as ratios when dealing with case probability is a metaphor based on analogy from class probability and is not in any sense objective (von Mises 1996, p. 114). However, people regularly think of probabilities, in such numerical terms (Caplan 1999). Moreover, ratio calculations does not affect Praxeology theory, because the fundamental claim of Praxeology is that people act under uncertainty or risk regardless of whether these are calculated as numerical probabilities or not. How they deal with risk or uncertainty specifically is an optimization or psychological issue. Right or wrong, ratio calculation is a means potentially chosen by an actor to deal with uncertainty (Hülsmann 1999).

Its basis is primarily historical and thymological[28] (folk psychological) understanding (von Mises 1996, p. 112). It employs what Popper (1945) calls "situation logic" to the future (Iorio 2008). It is based on introspection, experience in dealing with others, and knowledge of social environments, as well as history[29] (Plauché 2006).

10.6 Clarifying the Concept of Purposeful Action and Rational Behavior

Praxeology defines human action as behavior that is purposeful, that is, conscious "will put into operation and transformed into an agency… aiming at ends and goals… the ego's meaningful response to stimuli and to the conditions of its environment… man's conscious reaction to the given state of this universe" (von Mises 1996, pp. 11, 92). This is the nucleus of Praxeology, its paradigm and its "level of theoretical observation and interpretation" (Schuetz 1943).

However, the concept of human action is not always understood clearly. Two clarifications are considered pertinent. First, there is confusion regarding the Misesian position on human rationality assumptions (Caldwell 1984). It will be shown that Praxeology is fully compatible with the alleged irrationality of humans as represented by the likes of Vernon Smith, Daniel Kahneman and Dan Ariely (Boettke et al. 2012). Second, there is a need to clarify the relationship between

[28]Thymology, in contrast with experimental psychology, deals with "the content of human thoughts, judgments, desires, and actions" (von Mises 2007, p. 266). It relates to how people judge others, things and circumstances, and is about their desires, purposes and plans. It is something everyone engages in every day to make sense of others (von Mises 2007, p. 266). In such anticipative reasoning the actor enumerates the possible factors that could produce an outcome and the timing and extent of influence of each of these. He asks about the past aims of others, the meaning of their chosen ends, and the outcome of their actions given the natural and social environments. He also makes plausible assumptions regarding various instincts, passions and ideas. In this way he also makes anticipations for the future in order to aim, plan and act himself (von Mises 2007, pp. 310–315).

[29]To Mises the role of and value of history, in contrast to the narrower focus of thymology, is to make sense of our present situation in general, the situation in which acting man has to act (von Mises 2007, pp. 289, 293). It can help in making sense of present situations "in philosophy, in politics, on a battlefield, on the stock exchange, in an individual business enterprise" (von Mises 2007, p. 289). As such, the main task of the historian is "to assign as correctly as possible to every factor the range of its effects. This quasi quantification, this determination of each factor's relevance, is one of the functions that the specific understanding of the historical sciences is called upon to perform" (von Mises 1962, p. 102). A competent historian needs to be well versed in Praxeology, because he has to find out the aims of various individuals and groups of individuals involved in various events (von Mises 1962, p. 7). In addition, he needs to be familiar with economics, thymology and natural science. He uses these in the study of "the individual and unique conditions of the case in question… the valuations, the aims, the theories, the beliefs and the errors…" in an attempt to grasp the situation in which people had to act (von Mises 1990c, p. 12).

purposeful human action and habitual behavior. While Mises does address this issue, his treatment is incomplete and may even appear contradictory. In light of this, a possible solution to how Praxeology should look at habits is proposed.

10.6.1 Rational Versus Irrational Action

The conventional idea of rational action in scientific modeling is one of self-interest and optimization. Purposive action is considered as irrational unless it chooses a "rational" self-interested end, or chooses the best means.[30] Accordingly, prominent contemporary sociologist and philosopher of social science Jon Elster differs between instrumental rationality, such as wearing clothes to keep the body cool, versus norms, such as black clothes at a funeral (Elster 2009). However, rationality assumptions in economics has a tradition of opposing criticism.[31] For example, an early notable critic was Veblen (1909), but the most prominent has perhaps been Simon (1959) and more recently Tvetsky and Kahneman (Kahneman 2003). In this tradition, also Mises has been said to exaggerate the role of reason and downplay that of emotion in choice (Smith 1999).

However, Mises actually considers the role of emotions, feelings and taste to be dominant in reasoning (von Mises 1990c, p. 90, 1996, p. 21, 2007, p. 19). His idea agrees with the notion that choice of means and ends is fluid and imaginative rather than algorithmic (Aligica 2007). Indeed, it has been shown that even investment banker decisions, often seen as hyperrational, are frequently loaded with

[30]It should be noted again that the meaning of what is an end and what is a means is not an absolute. Perceived ends are "often merely instrumental to more final objectives" (Simon 1997). From one perspective, an act may be a means, but from another, an end. So for example, the pursuit of wealth could be seen as an end, chosen by taste and feeling. However, the pursuit of wealth could also be a means towards another end, such as being respected (von Mises 1990c, p. 22).

[31]However, von Hayek (1946) and Smith (2003) have asserted that in reality classical economists were aware of the problems with a hedonistic rationality assumption for human conduct, and had a complex and realistic view of human nature. Accordingly, Mill (2008, p. 42) stated that wealth maximization assumptions are made merely for practical purposes, and no "political economist was ever so absurd as to suppose that mankind are really thus constituted". Indeed, Adam Smith recognized the importance of moral sentiments in action, and that man has natural tendencies that "interest him in the fortune of others, and render their happiness necessary to him… (Smith 1982). On the other hand, Mandeville (1705) described in his poem "The Grumbling Hive" how vices of vanity, pride, greed and jealousy at the individual level leads to employment and production in a free market. Hence, the view of these philosophers seems to have been rather that a free market is better because "first, it doesn't require an expensive planning bureaucracy; second, it doesn't require that anyone be altruistically motivated" (Hill et al. 2010, p. 12). Rationalist philosophers, however, tended to erroneously assume that "people are endowed with the same power of reasoning," and neglect "the problem of erroneous thinking" (von Mises 2007, p. 270). These errors are not repeated in Praxeology, and no ultimate ends are taken as a priori axioms of all action. However, certain pursued ends of actors may serve as subsidiary assumptions in various theoretical models.

emotional content (Fenton-O'Creevy et al. 2011). Further, some neurologist have found that decision making ability actually depends on emotion (Damásio 1994; Markic 2009).

Accordingly, Praxeology makes no commitment[32] to *instrumental* rationality. Rather, to von Mises (2002, p. 69) action is rational if it "seeks means to realize ends."[33] Accordingly, even "neurotics" and "lunatics" can engage in rational action (von Mises 1990c, p. 22). Hence, the opposite of "rational" behavior, "is not irrational behavior, but a reactive response to stimuli on the part of the bodily organs and of the instincts, which cannot be controlled by volition" (von Mises 1990c, p. 23). Rather, what is often called "irrational behavior" is purposeful action inspired by noble motives or altruism, or something like the will to die for some cause, or actions considered as inappropriate by some censor. Such alleged "irrational behavior" is actually still purposive, and is therefore within the fold of the praxeological concept of rational or purposive human action[34] (von Mises 1990c, p. 24).

10.6.2 Purposeful Action Versus Unconscious Mental Processes and Habits

Mises defines human action as "behavior open to the regulation and direction by volition and mind," including the choice of remaining passive, "whenever a different form of behavior would be possible." In fact, if a person could influence physiological and instinctive behavioral factors, but does not, he has also acted purposively (von Mises 1990c, p. 19). Yet, Mises has been criticized for claiming that human action is consciously purposeful. First, because it "vastly understates the operation of unconscious mental processes," such as when one wakes up in the morning having found the solution to a problem one was trying hard to solve the

[32]Besides his own very open notion of rationality, Mises holds that there is a great deal of agreement among people regarding "the choice of ultimate ends" (von Mises 2007, pp. 268–270). For example, almost "all people want to preserve their lives and health and improve the material conditions of their existence" (von Mises 2007, pp. 268–270).

[33]Hence, rationality as optimization is to von Mises (1990c, p. 21) not a praxeological matter, but a "task of the various branches of technology". Of course, to an actor the choice of suboptimal means is always wrong, but if he misses the mark, "he is not 'irrational'; he is a poor marksman" (von Mises 2007, pp. 268, 280). Indeed, a man may ascribe attributes "to things that do not really possess them" or assume the existence of "non-existent human needs" (Menger 2007, p. 53). Accordingly, even though "the course of human history is by and large a series of errors and frustration," this is because man is fallible and the choice of means difficult. It is not because he is irrational. Rather, he errs in his thinking, is inefficient, and is often irresolute in choice of ends (von Mises 2007, p. 281).

[34]Interestingly, Mises' paradigm on rationality is also found in Hedstrom and Bearman's action oriented structural individualism, which "does not imply a commitment to any form of rational choice theory and in its barest form it may not make any reference to mental or intentional states whatsoever…" (Hedstrom and Bearman 2009b).

day before (Smith 1999). Second, because much of behavior may be operant conditioned habits (Caldwell 1984).

However, such criticisms are inaccurate. First of all, Mises does not *claim* that "human action is consciously purposeful," he *defines* human action as purposeful action and contrasts it with unconscious behavior. He is not claiming that a particular behavior is purposeful. He is merely establishing a convention, namely that conscious human behavior or activity is called action. Accordingly, in all the laws of Praxeology purposeful action is *assumed* (von Mises 1996, p. 126).[35] They are theories of action, not theories of mindless behavior (Gunning 1989). In fact, Mises even states that although conscious behavior is most often clearly different from unconscious activity it is in some cases "perhaps not easy to determine whether given behavior is to be assigned to one or the other category"[36] (von Mises 2002, p. 24).

Second, purposeful human action does not assume "that a man's choice is independent of antecedent conditions, physiological and psychological," such as unconscious problem solving (von Mises 1990c, p. 20). Accordingly, Mises means by human action that which is controlled by attention, i.e. both fast and slow thinking as defined by Kahneman (2011, p. 21).[37] This is if we exclude what Rothbard (1976) labels "knee jerk behavior" since this is involuntary. Hence the sense of "conscious" in "conscious behavior" qua "human action" is best understood as being opposed to "sleep walking," and not as an opposite to "carefully deciding" (Block 1980).

Moreover, although habits happen without much conscious thought, "a routine which possibly could be changed is still action," such as when the consequences become seen as disliked (von Mises 1990c, p. 20). E.g. if a man has a routine glass of water, he will still become alarmed if he detects a strange taste (von Mises 1990c, p. 20). Indeed, habits are not merely biological, physiological or instinctive reactions that one cannot influence (Aarts and Dijksterhuis 2000; Hodgson 2007).

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[35]For example, on the page cited, Mises states that the law of marginal utility depends on the "assumption that there is action" (von Mises 1996, p. 126).

[36]Second, as has been discussed previously, Praxeology is not concerned with the psychological drives behind choices. Rather, it is concerned with choice itself, action itself, and its consequences. In fact, Mises is in the final analysis a determinist, which makes it hard to claim that he understates the importance of unconscious processes. He says: "All that happens was, under the prevailing conditions, bound to happen. It happened because the forces operating on its production were more powerful than the counteracting forces. Its happening was, in this sense, inevitable" (von Mises 1962, p. 59). It is just that the natural sciences cannot predict in a law-like certainty what choices men will make. Thus, he considers the notion of subjective means and ends a final scientific explanation for practical purposes with regard to purposeful humans acts (von Mises 1962, pp. 58–59).

[37]In other words, Mises does not mean that human action necessarily involves careful calculations with sharp awareness in the manner of what Kahneman (2011, p. 12) calls "slow thinking" or "system 2" as opposed to the "fast thinking" or "system 1" of intuition and heuristics. It is also interesting to note in this regard that Kahneman (2003) states: "System 2 is involved in all judgments, whether they originate in impressions or in deliberate reasoning".

Rather, they are open to regulation by thought and will, even if they are often hard to change (Ferguson et al. 2008).

Habits are rational then, in the sense that they:

1. can be changed by human initiative;
2. can often be seen as adopted for some purpose at some point.

As such, they may be seen as either means to an end in light of past similarity, or may even be preceded by long term planning. For example, the routine of going to work in the morning could be a habit to achieve some carefully deliberated end, such as an early retirement (Schuetz 1943). Hence, a pattern of habit can also often be seen as a chosen pattern to reduce the cost of decision making when facing familiarity. Moreover, once familiar cues for a behavior are removed, more conscious decision making is activated. Habits are in this sense "reasonable," even though they do not involve a substantial, rational ideal type, reevaluation and consideration of alternatives at every point of engagement. Indeed, such profound reevaluations are admittedly rare, difficult to perform, and therefore not suitable as a paradigm for the study of daily human action (Schuetz 1943).

In sum, the concept of purposeful action is not incompatible with that of habitual action. Indeed, it will be argued next that cues, the dominant ingredient of habitual behavior is at some level an a priori category of even highly conscious behavior, and therefore of all purposeful action. This is an a priori not mentioned explicitly by Mises, and can be viewed as an expansion of the theory of Praxeology.

10.6.3 The A Priori of Cues to Action

Cues can be thought of as triggers that influence judgment and decision making, and these may take the form of language, or the surrounding physical environment, or physical experiences like position, activity or clothing (Adam and Galinsky 2012). Accordingly, a cue of some sort is an a priori of habitual behavior, since it is conceptualized as an automatic response (Danner et al. 2008; Neal et al. 2009; Ouellette and Wood 1998). For example, James (1914, pp. 4–6) considered habit as a form of reaction like physical cause and effect, but with capacity for change due to the plasticity of the human brain.[38] The degree of automaticity in the reaction, or lack of conscious decision making, has been found to be mainly a function of behavior frequency (Aarts et al. 1998).

However, the necessity of cues for action that involves more careful decision-making and conscious argument may not be very obvious. Indeed, the cue has not been found to be explicitly mentioned in the works of Mises as a category of action. Yet, there are reasons to believe that it is indeed implied in every conscious behavior.

[38]It was based on this theme of cue—reaction and plasticity Duhigg (2012) presented the habit loop of cue—routine—reward in his book "The Power of Habit".

To realize this it is important to emphasize at the outset that a habit, or automaticity, is not only in bodily reactions encoded in the brain. Rather, habits are "sequential, repetitive, motor, or cognitive behaviors elicited by external or internal triggers that, once released, can go to completion without constant conscious oversight" (Graybiel 2008). Thus, attitudes, inferences and beliefs can be more or less automated and thereby implicit in influencing a person's judgments, decisions and behavior (Aarts et al. 1998). These are referred to as implicit beliefs, spontaneous inferences, implicit impressions, implicit theories, implicit attitudes, cognitive biases, and so on (Uleman et al. 2008).

With this in mind, it can be seen that the necessity of a cue is implied by the a priori of time. As discussed earlier, time is a category of action because an actor always makes choices between now or later. The necessity of a cue in action is that there needs to be some perception that signifies the now or later. The cue is an a priori of action because if an actor was not triggered to act, his action would not occur. Something needs to spur him, tell him that now is the time for action as opposed to previously. Further, cues are necessary as feedback for action over time regarding progress toward goals and to inform decisions for further action (Moskowitz 2009). Indeed, it has been pointed out by Fogg (2009) of Stanford University that for behavior to occur, 3 elements have to come together at the same time: motivation, ability and cue.

The requirement of cues in action can also be illustrated through the method of Tarde (2000, p. 20) by considering the idea, or *meme*, as the basic element of social science. After all, as von Mises (2007, p. 93) stated, "ideas determine human action" since it involves notions of dissatisfaction, means, ends, etc. However, the process of attaining ideas cannot be wholly deliberate and under full conscious control. This is because one cannot know what one will think or remember in the next moment. After all, the act of thinking to make a decision implies not knowing what to do. Hence, if thinking itself was predictable and fully planned in terms of its outcome, then one would be able to know what one will know later, and that is clearly a paradox. Rather, ideas and sensory perceptions trigger ideas used in thinking. I.e., they are cued and emerge in the mind spontaneously.

The role of cues can also be seen through introspection, by realizing that one does not plan what to think in order to think it. For example, what one remembers is not at one's command. One never knows with certainty that something will be remembered. Even the act of willful remembering is a bit like fishing, one does not know what or when will be the next catch. Rather, one tries to think of cues that will bring wanted ideas to the surface of conscious awareness. Accordingly, since thoughts and ideas used in thinking come from memory, they are not under full conscious control. Rather, the process of pondering and deliberating is at its core a cued process that can be illustrated as follows, where the "black box" illustrates unknown elements of idea generation (Fig. 10.1):

In agreement with the argument above, it has also been affirmed empirically that unconscious mental processes have an important role in decision making (Gaal et al. 2012; Kiefer 2012; Prabhakaran and Gray 2012). Correspondingly,

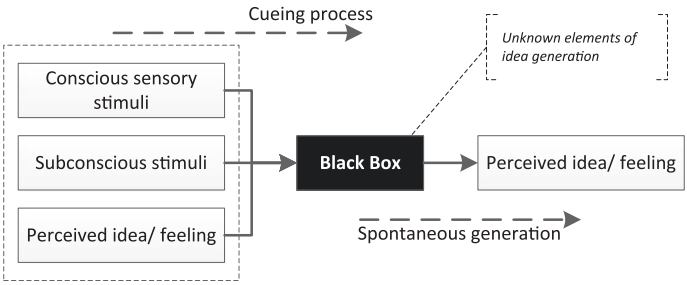

Fig. 10.1 The process of idea generation that underlies action. *Source* Tonsberg (2015)

"it is widely accepted that habits affect our choices, and past choices affect habits" (Hodgson 2010).

Hence, some actions may be considered strongly habitual or cued, while others are based on a great deal of thought in terms of benefits and costs, obstacles and means for overcoming, etc. One way of conceptualizing this is the Elaboration Likelihood Model (ELM) of persuasion (Petty and Cacioppo 1986). The ELM proposes that attitudes as likes and dislikes are generated by peripheral or central routing. The former is superficial and based on environmental cues while the latter is based on careful elaboration. The route taken depends on the individual's motivation or ability to process (Petty and Cacioppo 1986).

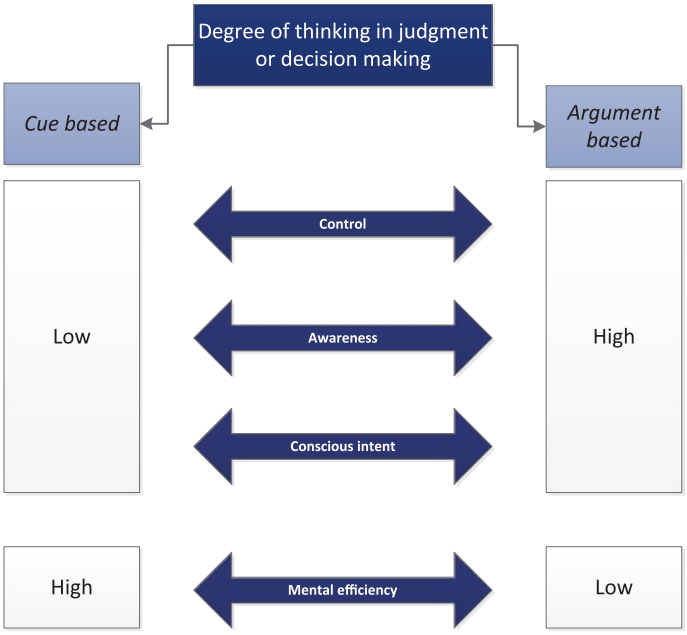

Fig. 10.2 Degree of conscious thinking in decision making. *Source* Tonsberg (2015)

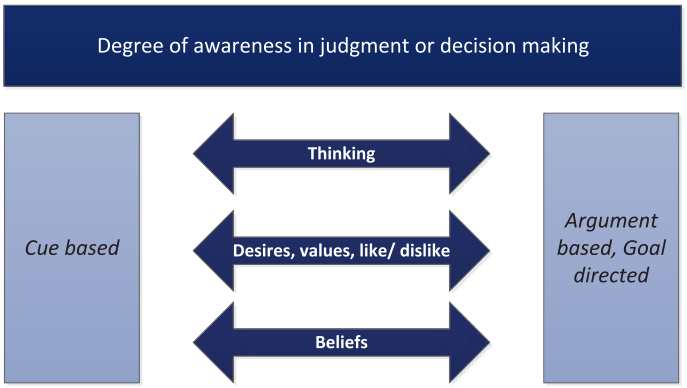

Fig. 10.3 Degree of awareness in terms of the key objects of judgment or decision making. *Source* Tonsberg (2015)

However, behavioral researchers have found that most thinking and behavior are complex intertwined processes that contain elements of both cues and elaboration (Bargh 1994). In other words, it is rare that action is purely automated in terms of what Bargh (1994) called the "four horsement of automaticity": control, awareness, conscious intent, and mental efficiency. Hence, one can conceive of a continuum of degrees of argument versus cue based decision making as illustrated in Fig. 10.2.

This continuum can also be used to illustrate the major constructs of the mind involved in judgment and decision making (Fig. 10.3).

According to the above arguments, cues are implied by action and are an a priori category of action, although their content and role varies. Perhaps the most significant implication of this is the importance of attention in thinking processes related to the subjective theory of value, as well as in the formation of means, ends and expectations. E.g., only alternatives that are cued to appear in the mind will receive attention, and they are limited by the duration of the opportunity to act as well as the psychic cost of seeking more options. Indeed, Mises himself states:

> we must not forget that human action is entirely determined by the individuals' physiological equipment and by all the ideas that were working in their minds (von Mises 1962, p. 25).

However, cues are as mentioned also crucial as markers of now versus later, i.e. as triggers of habit, signals of opportunity, conditionals of plans, and prompts of feedback.

Chapter 11
Methodological Procedures in Praxeology

In the preceding the fundamental a priori aspects of Praxeology have been elucidated and discussed, including methodological apriorism, subjectivism, individualism, dualism as well as the categories of action. To complete the description of Praxeology it remains to clarify how a practitioner of the science proceeds. This is a required for understanding how it would be applied to new areas, such as leadership studies.

The purpose of this section is to describe in more practical detail the Praxeological method for building theorems based on the categories of action. The section relies mainly on von Mises' (1996) *magnum opus*, "Human Action", originally published in German in 1940, and some of his other works. The reason for this is that Praxeology has not been developed significantly beyond the stage reached by von Mises, and literature searches show that it has not been notably applied to other fields other than economics.[1] In fact, when searching for literature on Praxeology one finds the works of von Mises, or those of his students elaborating on his theories, or one finds the critics of these theories, and little else. To better lay the foundation for the discussion the following will be addressed:

1. Explain how Praxeology brackets fields of study and proceeds to build theorems;
2. Show how von Mises built Praxeological theorems for economics.

11.1 The Procedures of von Mises

von Mises himself did not take his readers by the hand to provide a systematic, explicit and detailed procedure for the method of building praxeological theorems in different fields. The only way to discover this method is by making inferences

[1]These were presented earlier in the introduction.

T.A. Tonsberg and J.S. Henderson, *Understanding Leadership in Complex Systems*,
Understanding Complex Systems, DOI 10.1007/978-3-319-40445-5_11

from his writing in various places. However, in essence it is an a priori deductive method that starts with the category of action:

> Praxeology is a priori. All its theorems are products of deductive reasoning that starts from the category of action…. (von Mises 1962, p. 44)

The first step of praxeological theorem building is to elucidate all the concepts that are necessarily implied by the concept of action, i.e. to "extract and deduce" the categories of action and to "expound their implications and to define the universal conditions of acting as such" as was done above (von Mises 1996, p. 64). In this way it is ensured that all theorems of Praxeology have a firm a priori basis "that starts from an a priori category" (von Mises 1962, p. 44). In other words, all definitions used will be firmly anchored in the categories of action.[2]

The second step is to bracket the area of action one wants to study by defining the categories of special forms of acting:

> Having shown what conditions are required by any action, one must go further and define—of course, in a categorial and formal sense—the less general conditions required for special modes of acting. (von Mises 1996, p. 64)

This involves bracketing an area of study. For example, "economic theory is the result of combining the a priori properties of Praxeology with subsidiary praxeological assumptions that define the conditions of the market economy" (Gunning 1991). Accordingly, what makes a theorem praxeological, is using universal praxeological theorems as the foundation, and adding subsidiary assumptions that define the topic area of study, be it economics, leadership, or otherwise. An example is the category of profit and loss discussed earlier. This category is without any special conditions assumed purely a personal psychic phenomenon, but under the assumption of market conditions it becomes measurable (von Mises 2008c). Similarly, the category of means and ends can be defined more narrowly for economics as production and consumption (von Mises 2002, p. 33).

As what could be considered a third step one adds relevant assumptions to define further conditions of acting. Examples of extra assumptions, for the purpose of economics, are specialization, markets, private property, use of money, and the like (Gunning 1991). von Mises stated in this regard:

> Into the chain of praxeological reasoning the praxeologist introduces certain assumptions concerning the conditions of the environment in which an action takes place. Then he tries to find out how these special conditions affect the result to which his reasoning must lead. The question whether or not the real conditions of the external world correspond to these assumptions is to be answered by experience. (von Mises 1962, p. 44)

In other words, "for von Mises it is only the fundamental axiom of action that is a priori" (Rothbard 1976). The other assumptions do not have this requirement.

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[2]As an example of the importance of deriving action based definitions von Mises (1996, p. 255) complains that "money" lacks a rigorous praxeological definition. However, he downplays the harm of this particular case, saying that the term "commonly used" employed in defining money is vague, but that "this vagueness in the denotation of money in no way affects the exactitude and precision required by praxeological theory" (von Mises 1996, p. 398).

However, the ultimate purpose of adding assumptions is "that the treatment of the assumptions concerned can render useful services for the comprehension of reality" (von Mises 1996, p. 66). Hence they could reflect:

1. real prevailing conditions;
2. what could possibly become true in the future, or;
3. unreal conditions that help understanding things as they are, such as an economy assumed to have only one or two actors, or no uncertainty.

The choice of assumptions is directed by our experience, and by thinking of what hypothetical conditions need investigation in order to understand "what is going on in the real world" (von Mises 1996, p. 65). This is according to the scientific *principle of relevance*, which entails determining the limits of what questions and conceptual schemes are relevant to the problem at hand (Schuetz 1943). Hence the choice of assumptions involves judgments of relevance from the praxeologist, which means he may need to be well versed in a number of fields of study.[3]

11.1.1 A Summary of the Steps of Building Praxeological Theorems

The procedure of praxeological theorizing is about conceptualizing the categories of action under a set of assumptions chosen and to analyze the meaning of change in light of the concepts derived. This procedure for linking theorems of action to the categories of action could be described more formally in steps as follows:

1. Elucidate the universal, originary categories of action by deducing them from what is implied in a purposeful act and determining the relationship between them;
2. Decide on a special area of action to study. This choice depends on the interest of the researcher, such as market action, leadership action, political action etc. (Gunning 1991);
3. Formally define the area of study by adding subsidiary assumptions. This needs to be done in light of the categories of action like felt uneasiness or means. The purpose is to separate it from other kinds of action. For example, economics could be defined as interaction to reduce dissatisfaction through the medium of money, but it could also be narrowed further to more limited subcategories of action (Gunning 1991);

[3]Indeed, von Mises stated the need for an economist to be well versed in many fields of science and said:

> When I once expressed this opinion in a lecture, a young man in the audience objected. "You are asking too much of an economist," he observed; "nobody can force me to employ my time in studying all these sciences". My answer was: "Nobody asks or forces you to become an economist." (von Mises 1962 p. 4)

4. Elucidate the a priori categories particular to the area of study. This involves reviewing the universal a priori axioms of Praxeology identified in step 1 in light of assumptions made;
5. Analyze the nature of change in light of the categories, such as the effect of interference in the economy in von Mises' case. This is to illustrate the role of the categories of human action in change. This involves the employment of various assumptions and employing counterfactual reasoning, and may involve assumptions from other fields (Gunning 1991; Hoppe 1995).[4] For example, von Mises assumes the disutility of labor, and this is an assumption of psychological nature.

For example, if one was to develop a praxeological framework of leadership action, one would first need to elucidate the universal praxeological categories. After that, one would show how they are related to the case of leadership by adding assumptions that define this area of study. As a final step one would add any extra assumptions one judges relevant to the understanding of leadership in general or for particular circumstances.

11.1.2 The Nature of Praxeological Theorems

As explained above the building blocks of the deductive models of Praxeology consist of premises that are praxeological axioms and assumptions of an empirical or purely hypothetical nature.[5] The theorems generated based on these assumptions provide us with the tools for assessing how social facts or institutions will develop given a certain intervention or other event. They are attempts at partial pictures to facilitate the understanding of a complex reality.[6]

[4]There are two subjectivist fields of study that are important to the praxeologist and delve into the particulars of events. These are the fields of history and the psychology of purposeful action, where praxeological theorems are used at a different level "of theoretical observation and interpretation of the social world" (Schuetz 1943). Praxeological theorems may in these fields be employed to attempt approximate explanations or uncertain predictions regarding specific social facts, e.g.: the extent of the drop of market prices (von Mises 1996, p. 118).

[5]The latter may be strongly substantiated human tendencies such as the disutility of labor, the desire for wealth, the preference for more over less, and the preference for consuming now over later or they may be of a more tentative and situational nature. These tendencies cannot be quantitative laws but they can in principle be tested for specific settings; one can test whether the assumptions hold in reality.

[6]As such they are reminiscent of the words of Wittgenstein (2002, p. 17): "If we want to study the problems of truth and falsehood, of the agreement and disagreement of propositions with reality, of the nature of assertion, assumption, and question, we shall with great advantage look at primitive forms of language in which these forms of thinking appear without the confusing background of highly complicated processes of thought. When we look at such simple forms of language the mental mist which seems to enshroud our ordinary use of language disappears. We see activities, reactions, which are clear-cut and transparent. On the other hand we recognize in these simple processes forms of language not separated by a break from our more complicated ones. We see that we can build up the complicated forms from the primitive ones by gradually adding new forms".

The plausibility of being able to proceed from the categories of action while adding assumptions to get an understanding of reality is of course guided by judgments regarding relevance. As Schuetz (1943) states:

> What makes it possible for a social science to refer at all to events in the life world is the fact that the interpretation of any human act by the social scientist might be the same as that by the actor or by his partner.

In light of this, it goes without saying that keeping assumptions to an adequate minimum is desirable in praxeological research. This is what von Mises showed with mastery when he built his economic theories; he made a few assumptions close to what many would consider obviously true.

11.1.3 Imaginary Constructions—The Method of Praxeology

Throughout the procedure described above for building praxeological theorems von Mises follows a counterfactual procedure that ranges from simple statements to more elaborate models.[7] This "is the method of imaginary constructions" and von Mises calls it "the method of Praxeology" (von Mises 1996, p. 236). He further asserts that they are the only mental tools for the deductive method of Praxeology and are "indispensable for conceiving what is going on in this reality" (von Mises 1962, pp. 41–42). In spite of their importance, Gunning (2009b, p. 4)[8] goes so far as to state that he knows "of no Austrian economist who has written seriously about the method of imaginary constructions" and that their purpose is not understood even by most neo-Austrian economists.[9] For this reason it is important to elucidate this method in some detail[10] below.

[7]Rothbard (2009, p. 576) explains that von Mises did not use the word "model" because of its connotation of physicalist bias. Imaginary constructions are not like the models of engineering, because they contain imaginary elements that do not exist in reality but are mere tools for thinking and do not represent complete systems of parts.

[8]The statement is found in footnote number 4 on the cited page.

[9]This may be at least part of the explanation for why von Mises' Praxeology has not been adopted in other fields than economics to any notable degree. It is noteworthy that von Mises' student Rothbard makes extensive and systematic use of imaginary constructions in "Man, Economy, and State with Power and Market" he does not discuss what they are or how to use them. Moreover, his overriding concern is economic theory based on his ethics and not universal Praxeology.

[10]One reason why this methodology remains obscure but for the trained praxeologist is that von Mises uses it throughout his magnum opus "Human Action", but does not actually discuss it in any detail until page 236 (von Mises 1996).

Imaginary constructions serve to achieve an understanding of the highly complex where empirical data cannot provide quantitative constants (von Mises 1996, p. 237).[11] In this regard, von Mises (1996, p. 236) defines an imaginary construction as follows:

> An imaginary construction is a conceptual image of a sequence of events logically evolved from the elements of action employed in its formation. It is a product of deduction, ultimately derived from the fundamental category of action, the act of preferring and setting aside.

However, such constructions are not only for sequences of events as von Mises implies above. First, they are also used it to derive the category of action itself:

> we conceive the category of action by *constructing the image* of a state in which there is no action, either because the individual is fully contented and does not feel any uneasiness or because he does not know any procedure from which an improvement in his well-being (state of satisfaction) could be expected. (von Mises 1996, p. 237) (emphasis added)

Second, imaginary constructions are also used to elucidate functions in a system of action. For example, von Mises presents the function of a pure entrepreneur, stating:

> Let us try to think *the imaginary construction of a pure entrepreneur* to its ultimate logical consequences. (von Mises 1996, p. 253) (emphasis added)

However, an important question remains regarding how to construct such images. von Mises (1996, p. 237) states:

> The main formula for designing of imaginary constructions is to abstract from the operation of some conditions present in actual action. Then we are in a position to grasp the hypothetical consequences of the absence of these conditions and to conceive the effects of their existence.

Consequently, these constructions are *counterfactual images* designed to elucidate the properties and functions of action and their role in change.[12]

Hence, according to the procedure of building praxeological theorems, once an area of action for study has been defined, then imaginary constructions would first be used to elucidate the categories of action particular to the area of study. As an example for the study of leadership, one could argue that without a shared purpose at some level between leader and follower there is no leadership, as having

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[11] von Mises states: "What we can "observe" is always only complex phenomena. What economic history, observation, or experience can tell us is facts like these: Over a definite period of the past the miner John in the coal mines of the X company in the village of Y earned p dollars for a working day of n hours. There is no way that would lead from the assemblage of such and similar data to any theory concerning the factors determining the height of wage rates" (von Mises 1962, p. 74).

[12] They especially involve hypothesizing the absence of some aspect of reality in order to deduce its role or effect. An example is using the hypothetical absence of an urge for satisfaction for the purpose of elucidating the fundamental category of felt uneasiness, i.e. that no dissatisfaction means no action. Another example is how time preference is elucidated through "an imaginary construction in which no distinction is made between satisfactions in periods of time equal in length but unequal with regard to their distance from the instant of action" (von Mises 1996, p. 237).

no purpose implies that there is nothing being lead toward. Second, once a specific problem of action has been bracketed, imaginary constructions are used to analyze the role of action under change. An example is when Popper (1945, pp. 86–87) engaged in such counterfactual imagery to identify the factors needed for scientific progress: language, writing, and competition of ideas by means for their presentation, discussion, and criticism. He discovered these by first asking how one could arrest scientific progress.

11.1.4 Imaginary Constructions Employed by von Mises

The Table 11.1 summarizes some of the main imaginary constructions employed by von Mises and their purposes:

11.1.5 Value Freedom in Praxeology

After the preceding explication of the tools and procedures of Praxeology and before explaining more practical examples, it is deemed appropriate to briefly discuss their ultimate purpose. Praxeological models are used to evaluate the effects of interventions in a system of human action such as an economy. Accordingly, the praxeologist needs to build models that are relevant to the case at hand. He is therefore compelled to make value judgments as to what would be the relevant assumptions for the model so that it will reflect how things are in reality. This is unavoidable, but these are not judgments regarding good and bad interventions. Rather, these value judgments are of the kind made in normal scientific practice and are like the convention of the cut off rate for what makes a research result statistically significant (Gunning 2004).

However, von Mises is known to have made a staunch defense of liberalism and free market capitalism against virtually any type of government intervention (Kinsella 2009). Accordingly, one may ask the important question whether or not the economics of von Mises' is truly value free.[13] The response is that it is understood that von Mises made his argument based on what he *assumed* to be the common

[13]On the other hand, von Mises' well-known student Murray Rothbard is a notable critic of his teacher's notion of value freedom (Block 2005; Gunning 2005a, b; Rothbard 1976). His main contention is based on a misunderstanding, as Rothbard (1976) asks, "how could von Mises know what advocates of the particular policy consider desirable?" As we have seen, however, von Mises simply *assumes* that most interventionists, not all, are after greater wealth and cooperation through the division of labor driven by consumer sovereignty. Moreover, there is the possibility that they state what their goal is explicitly. As for Rothbard's objection to von Mises that "no one can decide upon any policy whatever unless he makes an ultimate ethical or value judgment," this is of course true (Rothbard 1976). However, as we have also seen, von Mises is not concerned about evaluating goals per se, he proposes rather to evaluate policies in light of stated goals.

Table 11.1 Major imaginary constructions employed by von Mises

Imaginary construction	Purpose
1. The pure (unhampered) market economy	To study the market process and the effect of interference with it (von Mises 1996, p. 238)[a]. This construction is therefore the most important mental tool of von Mises' praxeological economics along with the evenly rotating economy presented below[b]
2. The Robinson Crusoe (one or two man) economy	To elucidate the nature of interpersonal exchange and division of labor by comparing them with conditions in which they are absent (von Mises 1996, pp. 160, 243; Rothbard 2009, p. 96). It is also used for explaining other economic functions in acting.[c] Rothbard (2009, pp. 43, 47–106, 170, 187–189) makes extensive use of this image to explain phenomena like consumption, labor versus leisure, saving, capital formation, technology employment, violent and voluntary exchange, terms of exchange, appropriation of raw land, limitations of direct exchange, property, etc.
3. The barter economy	To show that prices are not measures of intrinsic value, but merely a medium of exchange (von Mises 1996, pp. 201–5)
4. The final state of rest and the final price (general equilibrium)	To show that with every change in factors affecting the market there is a tendency of bids toward a new future state of rest and corresponding hypothetical price, but that this state is never reached since the adjustment process takes at least a moment of time. Within this time other events will agitate the market before a final state of rest is ever reached (von Mises 1996, pp. 244–246). This image then is one of a tendency towards a stable, undisturbed market system, a system in homeostasis (Lehmann-Waffenschmidt 2007)
5. The evenly rotating (changeless/automatic reaction/actionless) economy of perfect price-, production- and consumption stability from day to day	To understand the effects of change by comparing it to a state in which it is absent and thereby elucidate the meaning of choice and uncertainty, the relation between prices of consumer products and goods that are factors of production, as well as the meanings of entrepreneurship, interest, profit, and loss. This is called the "static method" (von Mises 1996, pp. 244–250). This method is discussed further below
6. The stationary economy of no change in income and no profit[d]	To elucidate the role of profit and entrepreneurship under growth conditions by contrasting it to no-growth conditions
7. The progressing economy of income growth and net profit	To elucidate the function of net profit in an economy and elucidate the distribution of growing wealth[e] (von Mises 1996, p. 295)
8. The retrogressing economy of decreasing income and net loss	To show the need for profit and entrepreneurship to allocate factors of production even under economy wide net loss conditions (von Mises 1996, p. 288–289)

(continued)

Table 11.1 (continued)

Imaginary construction	Purpose
9. The functional distribution of economic roles	To discern functions in the market economy as entrepreneur, capitalist (including landowner), and worker. Their respective roles are: responding to change in market data, land/factor ownership, and working. The entrepreneur bears all risk whereas the capitalist earns interest and the worker wages. These are not ideal types but basic economic functions that may all be present in one man. This functional outlook serves to simplify the understanding of a more complex reality. (von Mises 1996, pp. 251–255) Other imaginary constructions may be used to elucidate these. E.g. the evenly rotating economy is used to elucidate entrepreneurship as mentioned above

Source Tonsberg (2015)

[a]von Mises (1996, p. 238) explains its role as follows: "… economics tries to elucidate the operation of a pure market economy. Only at a later stage, having exhausted everything which can be learned from the study of this imaginary construction, does it turn to the study of the various problems raised by interference with the market on the part of governments and other agencies employing coercion and compulsion … trade. There is, of course, no other way available for the elucidation of a measure limiting the free play of the factors operating on an unhampered market than to study first the state of affairs prevailing under economic freedom"

[b]The importance of these two constructions will be evident later in the discussion on von Mises' economic method

[c]Rothbard (1998, p. 29) states the following regarding the importance of the Crusoe imaginary construction: "… this seemingly "unrealistic" model, as I have tried to demonstrate elsewhere, has highly important and even indispensable uses. It serves to isolate man as against nature, thus gaining clarity by abstracting at the beginning from interpersonal relations. Later on, this man/nature analysis can be extended and applied to the "real world". The bringing in of "Friday" or of one or more other persons, after analysis of strictly Robinsonian isolation, then serves to show how the addition of other persons affects the discussion. These conclusions can then also be applied to the contemporary world. Thus, the abstraction of analyzing a few persons interacting on an island enables a clear perception of the basic truths of interpersonal relations, truths which remain obscure if we insist on looking first at the contemporary world only whole and of a piece … Crusoe economics can and does supply the indispensable groundwork for the entire structure of economics and praxeology—the broad, formal analysis of human action …"

[d]von Mises (1996, p. 251) warns that it must not be understood from the images of stationary, growing and retrogressing economies that it is possible to actually measure wealth, since value is ultimately an ordinal phenomena and is not absolute. They are as such historical ideal types

[e]von Mises (1996, p. 295) states: "The laws of the market divide this additional wealth between the entrepreneurs and the suppliers of labor and those of certain material factors of production in such a way that the lion's share goes to the nonentrepreneurial groups … The market is always moving toward the emergence of the final prices and the final state of rest. If new changes in the data were not to interrupt this movement and not to create the need for a new adjustment of production to the altered conditions, the prices of all complementary factors of production would—due allowance being made for time preference—finally equal the price of the product, and nothing would be left for profits or losses. In the long run every increase of productivity benefits exclusively the workers and some groups of the owners of land and of capital goods"

goal of the highest possible welfare for the vast majority.[14] This means the goal of *higher division of labor* combined with *consumer sovereignty*, or what is referred to as the theorem of *the harmony of rightly understood interest*.[15] In other words, von Mises bases his arguments on the assumption that most interventionists[16] do value such sovereignty along with increased division of labor because the first eliminates conflict of interest between buyers and sellers, while the second leads to higher productivity and output.

Hence, it can be understood from the above that what is purely scientific for von Mises is to show that consumer sovereignty and higher division of labor prevails in the free market, just as Ricardo's theory showed the value of cooperation as opposed to protectionism (Kirzner 1999). On the other hand, if interventionists are willing to sacrifice productivity and consumer sovereignty then they have

[14]Accordingly, von Mises' admits that monopoly is harmful based on his principles; monopoly power contravenes the notions of *the harmony of rightly understood interest* since the monopolist is no longer strictly serving the consumer by optimizing the division of labor (von Mises 1996, pp. 271–272). He even expresses sympathy with the demand "to expropriate all private property and to redistribute it equally among all members of society" in an agricultural society where property is merely inherited (von Mises 1962, p. 113). This is unlike in a market economy where profits are reinvested in higher productivity of labor through competition for the betterment of consumers (von Mises 2010). Yet another point of difference von Mises has with some liberalists is that he dismisses anarchism, holding that "government is indispensable because men are not faultless" (von Mises 1962, pp. 98–101).

[15]von Mises (1996, p. 673) argues that the division of labor makes things cheaper, not more expensive, because with "the higher productivity of labor performed under the division of tasks, the supply of goods multiplies," which again makes things cheaper for everyone and is thus in the interest of all. The power of this mechanism is such that "every man, even the humblest, obtains in one day more satisfactions than he could produce for himself in several centuries" (Bastiat 2001, p. 4). This realization regarding the division of labor is the *theorem of the harmony of rightly understood interest*, or long term interests, as opposed to those of the short term (von Mises 2007, p. 32). That is, the division of labor makes peaceful cooperation a selfish self-interest of the individual, because it makes one better off in the log-run than the short turn gains of robbery. It makes society the foremost means for an individual to attain his material aims (von Mises 1990b).

However, the *theorem of the harmony of rightly understood interest* is also connected to the notion of consumer sovereignty, or the idea that in a market society it is consumer demand that ultimately directs production activities (von Mises 1996, pp. 673–674). This is because profitable entrepreneurial initiative in employing factors of production depends entirely upon estimating consumer demands correctly. This means that with the exception of monopoly/oligopoly there is no conflict of interest between buyers and sellers.

[16]Friedman (1984) has expressed a similar view on the relationship between economics and interventionist goals, arguing that the difference between the scientific "what is" is in practice more or less equivalent to the normative "what ought to be," because the notions of what "ought to be" are very often shared. Thus, disagreements on economic policy are mainly about predictions and not the sought ends. For example, underlying the debate about minimum wage is the "underlying consensus on the objective of achieving a 'living wage' for all", thus the disagreement is on whether minimum wage legislation is helpful for achieving this. Similarly, expectations regarding the effects of "so-called 'economies of scale' account very largely for divergent views about the desirability or necessity of detailed government regulation of industry" (Friedman 1984).

made a judgment of which von Mises' economics has nothing to say. All he can do as an economist is to show what the proposed intervention means in terms of productivity and consumer sovereignty.[17]

The above clarifies the ground rules not only for praxeological economic study, but also for its other fields by analogy. That is, praxeological theorems are made to evaluate propositions for interventions or other changes in a system of human action based on some outcome criteria of shared value.

11.2 von Mises' Method of Economics Briefly Described

In the above, the methodology Praxeology employs was elucidated along with how it aims to be value free. However, to complete the clarification of how von Mises applies his methodology, it remains to be shown how he actually built theories. Without such examples there is little to provide concrete understanding of how to proceed in other areas than economics. Hence, examples of von Mises economic theories are presented below as demonstrations of the power of Praxeological methods, but also to point out the potential relevance of these to other fields of study. Specifically, there are four main lessons to draw:

1. The static method is the basic method for the study of change agency in a system of human action;
2. All the concepts in a theorem are tied to the categories of action;
3. Empirical assumptions are made;
4. The criticism of Praxeological theories are made through their assumptions.

11.2.1 The Static Method and Entrepreneurship as Change Agency

von Mises argues that "[t]here is no means of studying the complex phenomena of action other than first to abstract from change altogether, then to introduce an isolated factor provoking change, and ultimately to analyze its effects under the assumption that other things remain equal" (von Mises 1996, p. 248). This is what von Mises calls the "static method" (von Mises 1996, p. 248). It is a counterfactual procedure under *ceteris paribus* assumption applied to an imaginary construction

[17]von Mises states that if those that resort to an intervention measure "think that the attainment of this goal is more important than the disadvantages brought about by the restriction—i.e. the curtailment in the quantity of material goods available for consumption—the recourse to restriction is justified from the point of view of their value judgments". They incur costs and pay a price in order to get something that they value more than what they had to expend or to forego. Nobody, and certainly not the theorist, is in a position to argue with them about the propriety of their value judgments (von Mises 1996, pp. 755–756).

of a social system without uncertainty. Its purpose is to show the tendency of movement toward equilibrium[18] in a system of action and understand the difference between a world of human action and one of rigid algorithmic behavior.

Accordingly, von Mises (1996, pp. 249–250) employed in his economics an image of a situation of change and a situation of no change. For the first he proceeded to "elucidate the operation of the pure market economy" as an imaginary construction "to the study of the various problems raised by interference with the market …" (von Mises 1996, p. 238). The operation of the pure market economy is *assumed* to have:

- division of labor;
- private ownership;
- market exchange;
- a government that preserves the market system, as well as;
- no intervention foreign to the market itself and;
- no obstruction from institutional factors (von Mises 1996, p. 237–238).

The pure market image is in a state of constant change and consequent uncertainty and speculation driven by the felt uneasiness of human actors. It is in constant disequilibrium (Salerno 1999).

As a situation of no change to help grasp how the pure market operates von Mises introduced an image of an evenly rotating economy that is without human action. This economy is *assumed* to be without the constant change caused by "the bodily and psychological features of acting men" (von Mises 1996, p. 646). Thus, intersubjective uncertainty disappears. Every day is the same with the same transactions in quantity and price. It is a fantasy world "not peopled with living men making choices and liable to error; it is a world of soulless unthinking automatons; it is not a human society, it is an ant hill" (von Mises 1996, p. 248). One could also say that it represents an economy with quantitative predictability that would have been suitable for study by the methods of physics.

Using an economy without change as a baseline one can introduce various interference to show their effect on actors as compared to the pure market case. It shows that for every change there will be a response based on speculation of the uncertain implications of change by human actors as individuals (von Mises 2008b). Hence, the ultimate benefit of this comparative procedure of studying change and accompanying uncertainty is to understand the function[19] of entrepre-

[18]von Mises calls this image the evenly rotating economy, which was described earlier.

[19]von Mises states: "Economics, in speaking of entrepreneurs, has in view not men, but a definite function. This function is not the particular feature of a special group or class of men; it is inherent in every action and burdens every actor. In embodying this function in an imaginary figure, we resort to a methodological makeshift. The term entrepreneur as used by catallactic theory means: acting man exclusively seen from the aspect of the uncertainty inherent in every action" (1996, p. 252–253).
In reality, however … "[u]nder a system based upon private ownership in the means of production, the scale of values is the outcome of the actions of every independent member of society. Everyone plays a twofold part in its establishment first as a consumer, secondly as producer. As consumer, he establishes the valuation of goods ready for consumption. As producer, he guides production-goods into those uses in which they yield the highest product" (von Mises 1951, p. 120).

neurship, or "acting man exclusively seen from the aspect of the uncertainty inherent in every action" (1996, pp. 252–253, 348). In economics it shows how this function explains profit and loss based on expectations, as well as how prices of products and factors of production come about as a consequence of bidding toward an equilibrium (von Mises 1996, p. 348).[20] Moreover, it shows that dealing with uncertainty, or speculation, and hence profit or loss is implied in all purposeful action and "cannot be conjured away by any wishful thinking."[21]

However, entrepreneurship as human action is nothing other than action that is purely human (Gunning 1997b). This is because change introduced to a static situation implies not only dealing with uncertainty, but also speculation in terms of profit and loss,[22] means and ends; all that is implied in human action. In contrast, without change and uncertainty there is no *human* action since it lacks one of its categories; the category of uncertainty.

Accordingly, by analogy from Misesian economics, the praxeological method of inquiry is grounded in introducing change into an imaginary state of no action in order to elucidate *the role change agency as purely human action*. The purpose of this again is to assess the impact of change according to some desired measure or standard, such as the impact on the division of labor and consumer sovereignty in Misesian Economics.

[20]Although the entrepreneurial bidding process drives an economy towards equilibrium, it never reaches it. It is entrepreneurship that is the difference between an economy of robots and a dynamic growing one of human beings. Moreover, the above approach differs from that of the general equilibrium model by virtue of its emphasis on entrepreneurship; the existence of entrepreneurship means that there is no equilibrium (Gunning 1997a).

[21]von Mises (1996, p. 250) states in this regard: "The mathematical economist's disregard dealing with the actions which, under the imaginary and unrealizable assumption that no further new data will emerge, are supposed to bring about the evenly rotating economy. They do not notice the individual speculator who aims not at the establishment of the evenly rotating economy but at profiting from an action which adjusts the conduct of affairs better to the attainment of the ends sought by acting, the best possible removal of uneasiness. They stress exclusively the imaginary state of equilibrium which the whole complex of all such actions would attain in the absence of any further change in the data. They describe this imaginary equilibrium by sets of simultaneous differential equations. They fail to recognize that the state of affairs they are dealing with is a state in which there is no longer any action but only a succession of events provoked by a mystical prime mover. They devote all their efforts to describing, in mathematical symbols, various "equilibria," that is, states of rest and the absence of action. They deal with equilibrium as if it were a real entity and not a limiting notion, a mere mental tool. What they are doing is vain playing with mathematical symbols, a pastime not suited to convey any knowledge".

[22]It has been mentioned earlier that profit and loss are subjective concepts that reflect the success or failure in becoming better off, and are as such present in all action, not only those reflecting monetary transactions (von Mises 2007, p. 210).

11.2.2 Employing the Static Method to Understand the Process of Action Between Entrepreneurship, the Division of Labor and Consumer Sovereignty

It has been argued that the purpose of Praxeological Economics is to show the impact of interventions in the economy on the division of labor and consumer sovereignty. In the below it will be shown how von Mises links these two variables to human action as represented by the entrepreneur using the static method. It will also be demonstrated how the entrepreneur represents the key causal or explanatory factor in Misesian economics (Gunning 2009b, p. 50). It will consequently be argued that this should be likewise for any application of Praxeology.

First, with the evenly rotating economy as a static baseline, changes to consumer preferences are introduced. These lead to changes in demand through consumer action. The consequence of consumer choice is that human actors as entrepreneurs[23] respond by making appraisals and accordingly allocate equipment, labor, and natural resources based on speculation for profit (von Mises 1996, p. 252–254). If entrepreneurs are fast, efficient and accurate in their speculations they profit. If they are not, they lose in their role as risk bearers and allocators of capital.[24] Hence, entrepreneurs can be seen as arbitragers of knowledge bringing together the factors of production in unique ways in order to better serve demand and subsequently make a profit. Arbitraging in this sense reflects the original definition of the word as "giving judgement." Essentially, the entrepreneur gives judgement over the factors of production by seeking advantage in the uneven distribution of knowledge and performs a number of desirable social functions, including:

1. engaging in bidding down any large dispersion between price and costs;
2. seeking to improve technology and modes of production, and;

[23]von Mises states about the economic function of the entrepreneur: "The specific entrepreneurial function consists in determining the employment of the factors of production. The entrepreneur is the man who dedicates them to special purposes. In doing so he is driven solely by the selfish interest in making profits and in acquiring wealth. But he cannot evade the law of the market. He can succeed only by best serving the consumers. His profit depends on the approval of his conduct by the consumers" (von Mises 1996, pp. 290–291). In this way, entrepreneurs cause "the (prospective) means of production to be used to produce goods for the consumer" over time (Gunning 2001). They cause the division of labor. Moreover, by bids for factors of production they drive the price formations for all such factors. However, this process is ultimately driven by consumer goods prices which in turn are driven by subjective value judgments on the demand side (von Mises 1996, p. 332).

[24]von Mises (2008c) states: "In the capitalist system of society's economic organization the entrepreneurs determine the course of production. In the performance of this function they are unconditionally and totally subject to the sovereignty of the buying public, the consumers. If they fail to produce in the cheapest and best possible way those commodities which the consumers are asking for most urgently, they suffer losses and are finally eliminated from their entrepreneurial position. Other men who know better how to serve the consumers replace them".

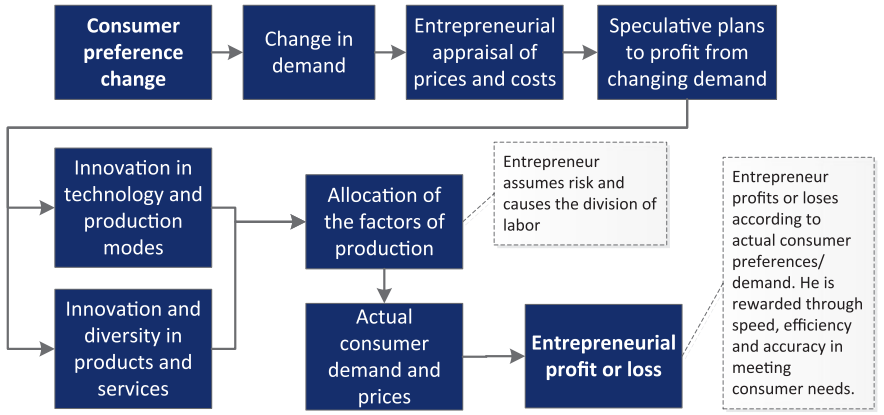

Fig. 11.1 The mechanism by which the entrepreneur serves the consumer. *Source* Tonsberg (2015)

3. diversifying how the various aspects of consumer wants are met in terms of goods (useful things, action, institutions, and ideas);
4. allocating factors of production to their most efficient use.

According to von Mises (1996, p. 338) then, the entrepreneurs ultimately struggle to remove the uneasiness of the consumer to the greatest possible extent though the division of labor, as illustrated in Fig. 11.1.

However, entrepreneurship not only explains how consumer demand is met and how production methods are improved. It also explains economic growth by managing "the accumulation of additional capital goods by means of saving[25] and improvement in technological methods of production" based on appraised consumer demand (von Mises 1996, p. 297). It is the entrepreneur who drives technological progress, invests savings and connects both of these to consumer betterment. In this way, they contribute to increased welfare for all, because wage earners are the majority of consumers and both of these groups have an interest in "the flowering of business" and in this sense "there prevails a harmony of the true interests of all groups of the population" (von Mises 1990d). This can be illustrated as shown in Fig. 11.2.

Praxeology's elucidation of the entrepreneur function also serves to clarify its value to society both as a function and a set of skills (Gunning 1997a). Moreover, it implies that profits are socially desirable, because without profit opportunities there is no entrepreneurship. In the evenly rotating economy where uncertainty has

[25]What is meant here is capitalist saving, for there are two types of saving in von Mises' economics: plain saving and capitalist saving. The first is just the postponement of a fixed quantity of goods for consumption. The second is where a choice is made "between the immediate consumption of a quantity of goods and the later consumption either of a greater quantity or of goods which are fit to provide a satisfaction which—except for the difference in time—is valued more highly" (von Mises 1996, p. 486).

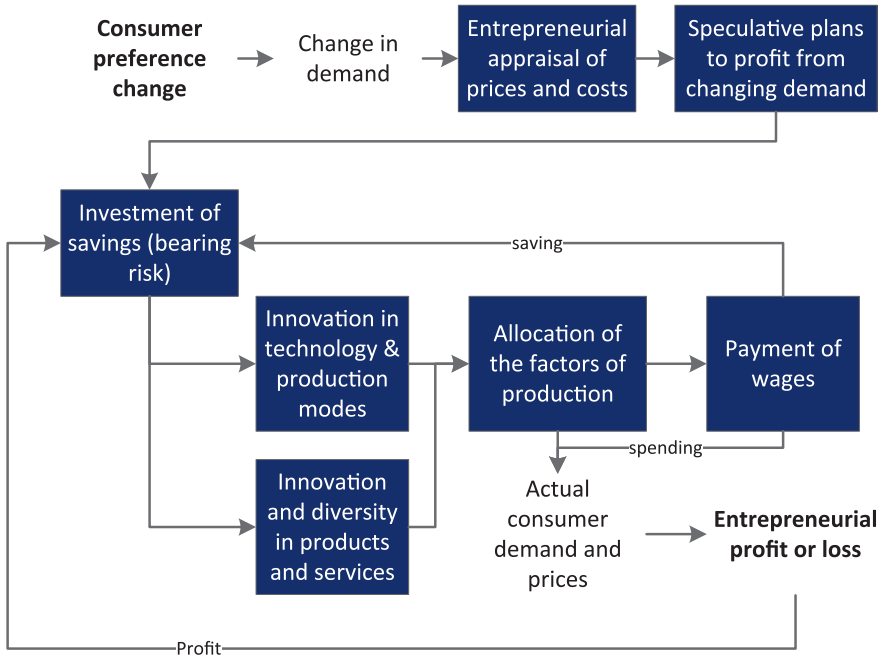

Fig. 11.2 The role of entrepreneurship in the pure market economy. *Source* Tonsberg (2015)

been removed there would be no profit. Any excess of price over cost would simply represent a surplus to replenish capital to keep the production going at the same rate.[26] Thus, profit is a result of the entrepreneur's bearing of uncertainty, namely, the imperfect knowledge of future demand, i.e.: knowledge arbitraging. As such, profit is a product of the mind and knowledge, of the mental action of anticipating future demand for goods. It is not caused by capital, but by human action. It should be considered as different from interest on capital employed, monopoly gain, inflationary price increase, and even the market price of the routine management work performed by the entrepreneur, because these elements could exist even in an economy without uncertainty (von Mises 2008c).[27]

The above demonstrates that by elucidating the role of the entrepreneur in a pure market economy, one is able to suggest explanations for the optimal allocation of resources, economic growth, and social harmony, as well as the role of prices and profit. However, one can gain further insight by contrasting it with a

[26]This is assuming no inflation and no monopoly powers.

[27]Since an evenly rotating economy has no change, what is normally entrepreneurial work would be simply the algorithmic arrangement of resources for production. Similarly, capital would be provided at an unchanging rate of interest plus any unchanging inflation rate assumed.

socialist system.[28] To begin with, such a system would have no private ownership and therefore no market with price bids. Hence, there would be no rational bases for prices, and consequently:

- no standard measure of value by which to make production plans or even determine the success of a project completed;
- no common measure by which to determine what factors of production should be produced;
- no means to establish the outcome of production by contrasting input and output …capital and income, profit and loss, spending and saving, cost and yield etc. (von Mises 1996, p. 210–1).

This means further that the signals of consumer needs would be lost, and with it consumer sovereignty. There would also be no entrepreneurial bidding or appraisal to drive the efficient division of labor; this important driver of social cooperation and optimization of resource use is left without a compass (von Mises 1990a, pp. 14–16).[29] After all, without prices on factors of production, money could play no part in economic calculations (von Mises 1951, p. 121).

In essence, the analysis shows that a lack of private property and, hence, prices would hamper the beneficial economic functions of entrepreneurship. Accordingly, von Mises (1951, p. 118) concludes that "the distribution of property rights effects a kind of mental division of labor, without which neither economy nor systematic production would be possible." After all, the information needed to centrally plan every detail of a modern economy is simply too vast (Yeager 1994). As shown by von Hayek (1945), it would entail an uncountable number of decisions in terms of what, when, where, and who for daily production and consumption needs.[30] This is not the least because real-life resource needs and availability change instantaneously and continuously (Buchanan 1982).

The above demonstrates the power of elucidating the role of the entrepreneur as a representation of human change agency from the viewpoint of uncertainty. It enables one to see how the entrepreneurial function explains the role of prices and profit and that it is a crucial component for the optimal allocation of resources,

[28]von Mises made an original contribution to the arguments against socialism beyond those based on the lack of incentives in the absence of private property (Rothbard 1991). He elucidated the calculation problem that a planned economy would invariably face in the absence of a real market.

[29]In fact, the evenly rotating economy used to picture a fully "planned" economy of automons is unachievable by socialism. This is because one would first need entrepreneurial bidding to reach such a hypothetical situation (von Mises 1996, p. 244). von Mises states: "When we think of the stationary society, we think of an economy in which all the factors of production are already used in such a way as, under the given conditions, to provide the maximum of the things which are demanded by consumers. That is to say, under stationary conditions there no longer exists a problem for economic calculation to solve. The essential function of economic calculation has by hypothesis already been performed" (von Mises 1951, p. 139).

[30]von Hayek's argument serves to compliment and expand on an aspect of the argument of von Mises presented above in less technical terms (Boettke 2006).

economic growth, and social cooperation. Accordingly, this method is not only a rich analytical tool, but also a method of systems thinking that puts human beings at the center, rather than algorithmic automons. Indeed, Salerno calls the praxeological static method "the one, true method of theoretical inquiry in economics" (Salerno 1999). Accordingly, it should play a key role in any application of Praxeology to other fields than economics as well.

11.2.3 The Business Cycle Theory of von Mises; The Use of Action-Based Definitions and Empirical Assumptions

The business cycle theory of von Mises is perhaps his most famous contribution to economics. For the purpose of our discussion it also demonstrates the use of definitions based on the categories of action, as well as the use of empirical assumptions. It begins with the refutation of Jean-Baptiste Say's claim that money is neutral (von Mises 2008a). von Mises (2008b) points out that money in the economy is always in someone's possession with their unique preferences. Hence, one has to investigate the extent to which "the additional demand of those first benefited reaches other classes of individuals" (von Mises 2008b). Accordingly, there is an income redistribution inherent in money supply increases that could fundamentally change the plans of actors.

From this starting point von Mises begins to derive his concepts of interest based on the categories of action in order to explain the business cycle. First, from the category of time he derives the concept of originary or neutral interest based on the fact that scarce goods need to be allocated for saving and consumption in terms of now or later; even in a fictive evenly rotating economy without risk, profit or inflation there will be an originary interest as reflected in "the ration between prices of present and of future goods." Accordingly, if a person in such a fictive situation invested $100 in order to have $104 after a year, it would reflect an originary interest rate of 4% (von Mises 1996, p. 486). In other words, originary interest is driven purely by changing plans of consumption now versus saving for later (von Mises 1996, p. 538). Since it is based on the category of time, the originary rate of interest is necessarily present in any market by implication.[31]

[31]However, this rate is not equal to the gross interest rate in reality, because this rate also includes:

1. Profit for dealing with risk and uncertainty. For example, "risks involved in moneylending do not affect the height of originary interest; they affect the entrepreneurial component included in the gross market rate"; (von Mises 1996, p. 541).
2. A "price premium" for "future changes in purchasing power" which if correctly calculated would leave one with a neutral rate of interest (von Mises 1996, p. 542).

Gross market interest rates then, include originary interest, profit and a price premium (von Mises 1996, p. 537-546). However, the profit portion is bid down by entrepreneurs towards "the ratio which corresponds to that of originary interest" (von Mises 1996, 551).

The importance of originary interest is that it reflects plans for investment or consumption. As explained previously, it is the role of the entrepreneur in an economy to appraise consumer plans along with prices, interest rates, and wage rates in order to discover opportunities for profit. The role of interest in this appraisal is that its originary component described above indicates time preferences for savings and consumer goods.

However, since money is not neutral, a change in the supply of money frustrates attempts to appraise the real plans of consumption as money moves gradually through the hands of actors in the economy (von Mises 1996, p. 547). This leads in sequence to malinvestment, eventual losses, and recession. This situation can only be remedied by the reassignment and accumulation of new capital, and an adjustment of wage rates. This is a time consuming process that cannot be mended by another credit expansions that further frustrates entrepreneurial appraisals. von Mises (1996, p. 578) states:

> One must provide the capital goods lacking in those branches which were unduly neglected in the boom. Wage rates must drop; people must restrict their consumption temporarily until the capital wasted by malinvestment is restored. Those who dislike these hardships of the readjustment period must abstain in time from credit expansion.

If on the other hand credit is further increased to remedy the situation, this will again make the appraisals of entrepreneurs more difficult and cause even more malinvestment.

At this point in elaborating his theory von Mises introduces psychological factors[32] to explain the temptation for further credit expansion in a recession. These are the same factors that prevent people from facing reality by cutting their losses and lowering their standards as required.[33] However, von Mises does not merely

[32]von Mises (1996, p. 578) states: "The process of readjustment, even in the absence of any new credit expansion, is delayed by the psychological effects of disappointment and frustration. People are slow to free themselves from the self-deception of delusive prosperity. Businessmen try to continue unprofitable projects; they shut their eyes to an insight that hurts. The workers delay reducing their claims to the level required by the state of the market; they want, if possible, to avoid lowering their standard of living and changing their occupation and their dwelling place. People are the more discouraged the greater their optimism was in the days of the upswing. They have for the moment lost self-confidence and the spirit of enterprise to such an extent that they even fail to take advantage of good opportunities. But the worst is that people are incorrigible. After a few years they embark anew upon credit expansion, and the old story repeats itself".

[33]With regard to the incorrigibility mentioned by von Mises above, Smith (1991) has demonstrated in laboratory experiments some of the psychological dynamics of the boom and bust cycle. He eloquently describes them as follows: "Some are puzzled by the failure of shares to trade at fundamental dividend value, and with the 'panic buying' they observe. Many report amazement at the speed with which a market crash can occur, and that they had expected to sell out ahead of the others when the crash came. Once the market turns, some are hesitant to sell, because they can't bring themselves to cash out the capital loss, or because they hope for a recovery. Many report a reluctance to sell before the crash because they were 'too greedy'. Somehow, the volatile behavior of the market was due to the other traders. Although they have no causal explanation of their experience (prices rise 'without cause') and their consensus forecasts never predict the crashes, their comments are consistent with the market observations, with a self-reinforcing expectations view of the boom, and with the tendency of the market crash to dividend value to take two or three periods to occur" (Smith 1991).

employ psychological data anecdotally in his business cycle theory. He also explicitly *assumes* that businessmen will continue to be thrown off in their speculations by credit expansion. A possible explanation for such a phenomena is that short-term expansions in consumer goods markets forces business people to respond or face competitive losses (Shostak 2003). Whatever the explanation, the important point demonstrated here is that as praxeological reasoning progresses from a priori axioms, it employs assumptions that are both empirical and from other fields, such as psychology or decision theory.

11.2.4 Empirical Issues in von Mises' Economics; Falsification Based on Assumptions

It has been mentioned earlier that praxeological theorem are falsified in terms of either logical flaws or assumptions that are not true of the situation they aim to describe. Hence, a complete description of the praxeological process ought to include an example discussion on the appropriateness of the assumptions made. In this regard, for the economic theorems discussed above, perhaps the assumption with the most wide ranging consequences is found in the imaginary construction of the pure market. In it von Mises (1996, pp. 237–238) assumes that there is no obstruction by institutional factors[34]; there is a very tight relationship between responding to the market "correctly" and the whip of profit and loss accountability since all risk bearing and allocation of the factors of production with the entrepreneur function.

In fact, von Mises (1996, p. 655) recognized that institutional problems are present in reality, stating that "laws concerning liability and indemnification for damages caused were and still are in some respects deficient." The problem is that when one separates the appraisal and factor employment role of the entrepreneur from that of full liability for decisions made, one could affect decision making dynamics substantially away from what consumer sovereignty dictates. Consequently, von Mises' pure market construction leaves a gap in terms of what the optimal institutions are, not the least in terms of laws and law enforcement.

This is an important issue that ought to be of general interest. After all, rules and laws specify a framework within which the spontaneous order of the market takes place (Coleman 1991). Moreover, even a free market proponent cannot simply assert that a principle of freedom of contract is a viable option, because this would entail enforcing even contracts for the restraint of trade (von Hayek 1957, p. 115). Indeed, anti-interventionists like von Mises are bound to recommend

[34]Other explicit assumptions for the pure market are: no intervention foreign to the market itself, division of labor, private ownership, market exchange and a government that preserves the market system (von Mises 1996, p. 237–238).

political intervention to preserve the free market (Popper 1944b). In fact, von Mises himself states that "[l]iberalism does not contest the need of a legal order when it restricts the field of State activity" (von Mises 1951, p. 57). Yet, as pointed out by Deakin (2010) legal institutions develop in a rather ad-hoc manner and hence the idea that "the corporation of today represents the last word in legal efficiency is highly misleading."

Such unsolved institutional problems include that of monopoly and with it the idea of intellectual property laws which actually enforce monopolization (von Mises 1996, pp. 271–272, 385–386). Also included is the notion that the lack of complete private property systems can lead to serious conflicts between the long and short term interests of human beings (Henderson 2011, p. 152). In this regard, there are the well-known problems of externalities like pollution, free goods, and resource depletion (von Mises 1996, pp. 654–656).[35] A more subtle institutional problem is related to contract law, namely, that of deception in a market of imperfect information. As pointed out by Smith (2003) "enforceable rights can never cover every margin of decision, opportunism in all relational contracting and exchange across time are costs, not benefits, in achieving long-term value from trade; an ideology of honesty means that people play the game of 'trade,' rather than 'steal.'"

Another subtle issue related to contract law is that of accountability for losses and gains in business enterprises, i.e., the "method that makes individuals responsible for their contributions to the joint productive effort" (von Mises 1996, p. 289). There are for example the agency problems of the separation of ownership, liability and management in the modern corporation as famously raised by Berle and Means (1932) (Jensen and Meckling 1976). More specifically, as pointed out by von Mises (1951, p. 209) himself,[36] "if the directors have interests other than those of a part, or of the majority, or of all of the shareholders, business is carried on against the company's interests …" Actually, it was already pointed out by Smith (2009, p. 439) that such companies tend toward excessive size due to

[35]von Mises (1996, p. 655) himself recognizes the problem that "The laws concerning liability and indemnification for damages caused were and still are in some respects deficient … the right of property would entitle the proprietor to claim all the advantages which the good's employment may generate on the one hand and would burden him with all the disadvantages resulting from its employment on the other hand. …. But if some of the consequences of his action are outside of the sphere of the benefits he is entitled to reap and of the drawbacks that are put to his debit, he will not bother in his planning about all the effects of his action".

[36]von Mises' concern with regard to the legal institution of joint-stock companies was not from the viewpoint of its viability in light of consumer sovereignty, but to refute the socialist argument that such companies are proof of the viability of socialist bureaucracy.

investors' "total exemption from trouble and from[37] risk, beyond a limited sum",[38] but also toward poor management since the directors manage "other people's money."[39] Indeed, it may be argued that the nature of joint-stock institutions is behind the controversial issue of executive compensation (Bebchuk and Fried 2003).

Thus, it can be seen that there are plenty of problems for a praxeologist to deal with, even in economics. In these issues, as stated by Koppl (2006), experimental findings may help one gain "knowledge of which institutional structures promote the discovery and elimination of error and which institutional structures promote error and ignorance." Moreover, new praxeological theories need empirically based assumptions just as much as the theories of von Mises did, such as his business cycle theory as mentioned.

[37]Corrected from "front trouble and front risk".

[38]von Hayek (1957, p. 116) states in this regard: "…little intellectual effort has been directed to the question in what way this legal framework [i.e. contractual law] should be modified to make competition more effective. The main field in which these problems arise and the one from which I can best illustrate my point is, of course, the law of corporations and particularly that concerning limited liability. I do not think that there can be much doubt that the particular form legislation has taken in this field has greatly assisted the growth of monopoly or that it was only because of special legislation conferring special rights-not so much to the corporations themselves as to those dealing with corporations-that size of enterprise has become an advantage beyond the point where it is justified by technological facts".

[39]Such institutional problems are not well accounted for in von Mises' model since he associates all risk bearing and allocation of the factors of production with the entrepreneur (von Mises 1996, pp. 290–291). Hence, it assumes a very tight relationship between responding to consumer demands "correctly" and the whip of profit and loss accountability for any deviance. However, when one separates the appraisal and factor employment role of the entrepreneur from that of full liability for decisions made, one could affect decision making dynamics substantially away from what pure consumer sovereignty in the market dictates.

Chapter 12
Distinguishing Features of Praxeology

In the above, it has been shown that the praxeologist, as a social scientist, looks for those elements that drive individual action and thereby social structure. Accordingly, he employs a priori categories and assumptions to deductively reveal something about various social phenomena.[1] In this sense, Praxeology is following a methodological apriorism similar to mathematics, which hopes to achieve "the systematic construction of complex deductive arguments … capable of eliciting, from comparatively meager premises and by routes far from immediately obvious, a wealth of often surprising consequences" (Dummett 1994). It is, therefore, close to the model building approach of system mechanisms in sociology to explain how social facts are brought about (Bunge 2004b; Elster 1999; Hedstrom and Bearman 2009b; Pickel 2007; Tilly 2001).

However, this still leaves a question with regards to how Praxeology differs from any other theoretical model building in the social sciences. The answer is that it is distinguished by being explicit in its apriorism. It explicitly deduces what is necessarily and universally implied in action, being: its categories, such as dissatisfaction, time, and uncertainty. It then applies its pure a priori form to some situational content of "different kinds of thinkable conditions" (Mises 1990c, p. 9). That is, after applying some concrete content in terms of assumptions to the formal categories of the theory of Praxeology and the context of action (Kirkpatrick 1983). In other words, it follows a conceptual procedure of deduction to build theories based on what we know a priori about purposeful action (Hoppe 1995; Hülsmann 1999; Mises 1990c, p. 9; Rothbard 1957, 1976).

[1]Hence the essential difference between the natural and social sciences is "that in the natural sciences the process of deduction has to start from some hypothesis which is the result of inductive generalizations, while in the social sciences it starts directly from known empirical elements and uses them to find the regularities in the complex phenomena which direct observations cannot establish" (von Hayek 1957, p. 126).

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Table 12.1 Theorems of Mises' economics phrased as Popperian[a] social laws

One cannot increase the money supply in an economy without increasing the difficulty of entrepreneurial appraisal, because a credit expansion causes both wealth distribution effects as well as false signals regarding the propensity to save and consume
One cannot hurt entrepreneurship without hurting the long-term interest of consumers because entrepreneurs are the drivers of cost efficiency, innovation, and capital growth in their pursuit for profit under changing economic conditions
One cannot interfere with the amount and distribution of profit without hurting the consumer because profits are the entrepreneurs' signal for changing consumer needs
One cannot rationally evaluate the potential or actual economic success of employing factors of production without prices, because there is no other common measure of value (i.e., one needs prices and thereby entrepreneurship as clarified in the next theorem)
One cannot have a rational price system for factors of production without private property because without it there is no meaningful bidding (i.e., one needs private property to have an entrepreneur function that performs the bidding)

Source Tonsberg (2015)

[a]Mises' theorems in the table are summarized in the manner suggested by Popper (1944) for social laws; i.e., not as specific predictions, but in terms of what cannot be achieved or avoided for a given situation *ceteris paribus*

This does not merely serve to provide a concrete starting point for the scientist to begin his research on specific problems of social science. Rather, with this requirement of including the categories of action, Praxeology ensures that the theorizing is focused on voluntary human action as it is and not, e.g., robotic action (Leeson and Boettke 2006). Hence, as has been shown, the emphasis is on elucidating the role of the entrepreneur as a representative of pure human action embodying the category of uncertainty. The entrepreneur represents in Praxeology the essence of *human* change agency, as opposed to one that can be represented by an algorithm. In fact, the theorems mentioned in the discussion on Mises' economics are all related to the entrepreneurship function, as clarified in Table 12.1.

Of course, as mentioned earlier, Mises does not claim that Praxeology is something new. It is rather the elucidation of what he considers good social science practice by always keeping in mind that it ultimately deals with individual human beings that act subjectively, i.e., based on values, preferences, perceptions, beliefs, and so on.[2] Hence, it is an aprioristic method based on the subjective theory of

[2]It may be mentioned in this context that although Praxeology is founded upon the notions of value and preference, it does not deal with why people have the values that drives them toward particular choices and actions. That is, theories of praxeology concern "the endeavor to reach a goal by the use of means," but not causal explanation of psychological drives involved or ethical evaluation of means and ends (Mises 1990c, p. 9). Rather, it deals rather with the fact that they choose and act "in compliance with a choice made" (Mises 2007, p. 271). Hence, it may be said that Praxeology itself is conceptual and deals in universals and categories, and does not provide a complete explanation for specific events alone. Rather, its theorems may be employed for such a purpose by employing assumptions (Mises 1996, p. 51). For example, the perceived disutility of labor and other psychological assumptions are important in Praxeology and the Praxeologist needs to be familiar with the empirical support for assumptions that he incorporates in his theorems. However, it does not aim to explain them.

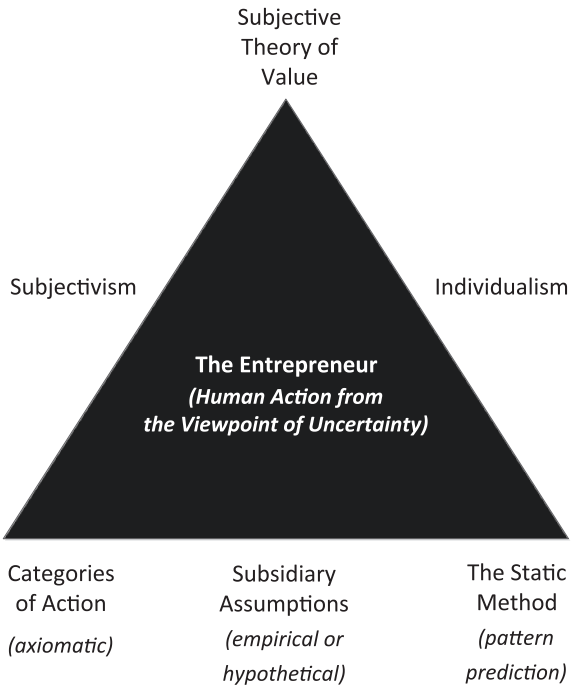

Fig. 12.1 The pyramid of main tools and principles of praxeology. *Source* Tonsberg (2015)

value, methodological subjectivism, individualism and the categories of human action as well as the elucidation of entrepreneurship by way of the static method and subsidiary assumptions. This is illustrated in the pyramid as shown in Fig. 12.1.

In the figure the subjective theory of value has been placed on top to signify its importance. Next are the principles that are implied in this theory and also serve as underlying philosophies for the approach of the praxeologist: subjectivism and individualism. At the bottom are the practical tools of substantive praxeological work: the a priori categories of action, subsidiary assumptions of an empirical or hypothetical nature, and the static method to analyze the impact of change for the purpose of pattern prediction. At the center is the entrepreneur function for its central importance as a representative of human action from the viewpoint of uncertainty. This is to stress that Praxeology is about understanding the process of human action as opposed to the action of robots or ants.

Part III
Entrepreneurship, Imitation and Innovation

It has been shown that the entrepreneur plays a central role in Misesian economics as a functional type representing change agency from the viewpoint of uncertainty. However, this praxeological function is not exclusive to economics, let alone the study of business start-up activities or small enterprise. This is because it represents human action in the context of case probabilistic uncertainty, rather than that of the algorithmic and artificial world of mathematized models. Accordingly, all human action is entrepreneurial (Foss and Klein 2012, p. 221). Hence, praxeology applied to any field will involve an elucidation of its entrepreneurial component.

Yet, the praxeological entrepreneur functional type is still poorly developed in light of its central importance. A main reason for this is that Mises (1996, p. 255) sees entrepreneurs, beyond the function of dealing with uncertainty, as ideal types[1] of varying abilities that are difficult to define praxeologically. It is simply a given that "various individuals do not react to a change in conditions with the same quickness and in the same way"[2] (Mises 1996, p. 246). Indeed, there seems to be a

[1]Ideal types are ideas of types of people, or an idea of a person. They are unlike praxeological functional types, which represent functions of action that may be represented by an individual or several individuals in part or in whole.

[2]Accordingly, he considers path-breaking entrepreneurs to defy scientific explanation along with geniuses like Beethoven, Nietzsche and Goethe. They tend to be tormented souls who struggle in their fields of excellence for the sake of the struggle itself (Mises 1996, p. 139–140). There is indeed nothing that appears axiomatic about their action. For example Mozart, addressing a certain baron of unknown identity, stated: "You say you should like to know my way of composing and what method I follow in writing works of some extent. I can really say no more on this subject than the following; for I myself know no more about it. When I am, as it were, completely myself, entirely alone, and of good cheer—say traveling in a carriage or walking after a good meal, or during the night when I cannot sleep; it is on such occasions that my ideas flow best and most abundantly. Whence and how they come, I know not, nor can I force them" (Holmes 2005, pp. 255–256). In other words, one does not simply choose to come up with significant ideas; the way they come to mind seems to remain far from algorithmic and somewhat mysterious.

component of loneliness and incubation[3] (Perry-Smith 2008). Accordingly, Mises does not discuss imagination and innovation in great detail. Rather, all praxeology can contribute is knowledge of "how one can organize society in such a way that no room is left for pioneers and their path-breaking" (Mises 1996, p. 140). Of course, what Mises is referring to here is that a planned economy will strangle any entrepreneurial component, while the pure market economy model is the ideal for letting it prosper.

However, for more limited social situations than an entire economy one may be in need of more detail on the entrepreneurial function. For example, in a private enterprise or charitable organization which are bound by specific purposes and limited resources, one needs to find the right balance between detailed commands and free initiative. Moreover, even though genius has unexplained components, Mises (2007, p. 263) may go too far when he dismisses education as unable to "convey to pupils more than the knowledge of their teachers" or rear other than "disciples, imitators, and routinists." After all, not all education is rote learning and the possibility of promoting higher performance at a general level through particular institutions and more sophisticated learning methods cannot be dismissed a priori (Ericsson 2006b). Moreover, research suggests that genius is a combination of highly deliberate and dedicated hard work, an above average mind, and a very large dose of being in the right place at the right time and with the right people (Ericsson 2006a; Simonton 2006).

This means that it may still be useful to focus on what the behavioral and environmental elements of high entrepreneurial performance are in any field of action and how they can be developed and facilitated. This is especially important in today's knowledge economy (Ericsson 2006a). For one, leadership study needs to account for how to promote high levels of expert performance and innovation in an organizational environment. Hence, it appears worthwhile to attempt developing the concept of entrepreneurship further in Praxeology in order to provide empirical research with an a priori framework. Its purpose would be to tell what entrepreneurial evolution consists of in principle, and could be helpful in designing institutions that facilitate it.

However, there is another a priori framework for human action that has been proposed to be better suited for the study of entrepreneurship, namely that of evolutionary economics. Hence, the criticism raised against Praxeology from that viewpoint will be discussed first, attempting to show that a praxeological framework may be better suited by having more explanatory power and by being able to actually incorporate the main components of an evolutionary approach. As illustrated in Fig. 1, this proposed perspective entails differing between two basic types of entrepreneurial sub-functions, namely, imitation and innovation, based on the observation that the means of action are either novel or not.

[3]One might ask the important question: would these individuals mentioned by Mises have achieved the label of genius if born today? The answer is by no means obvious; one cannot tell. It may be argued that a large part of the equation is being in the right place at the right time.

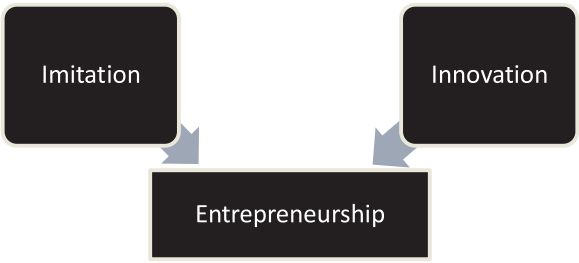

Fig. 1 Entrepreneurship as imitation and innovation. *Source* Tonsberg 2015

After introducing the evolutionary perspective, it will be argued that there is an a priori of discovery that can be seen as an ultimate a priori category behind the a priori categories of the structure of the mind that Mises elucidated. The reason is that a common element of praxeological, logical, and empirical reasoning is the phenomena of seeing such patterns in the first place. Hence pattern discovery is logically prior to such reasoning as mentioned, and it will be shown in the deductive manner of Praxeology how this a priori relates to the other categories of action. Subsequently, it will be elaborated on how discovery and imitation both relate to action in general through the learning of a logic of perceived possibilities, or knowledge of how things in the world function and relate. Third, the a priori elements of innovation will be elucidated and related to this logic of perceived possibilities as well.

These a priori observations to be made regarding purposeful imitation and innovation are important, since as human action these will never be guided by more than qualitative prediction. After all, it is paradoxical to propose to predict what will be known tomorrow.[4] Thus, it makes sense to specify the a priori axioms of learning, imitation, and innovation to gain at least a qualitative understanding and

[4]This paradox was discussed earlier.

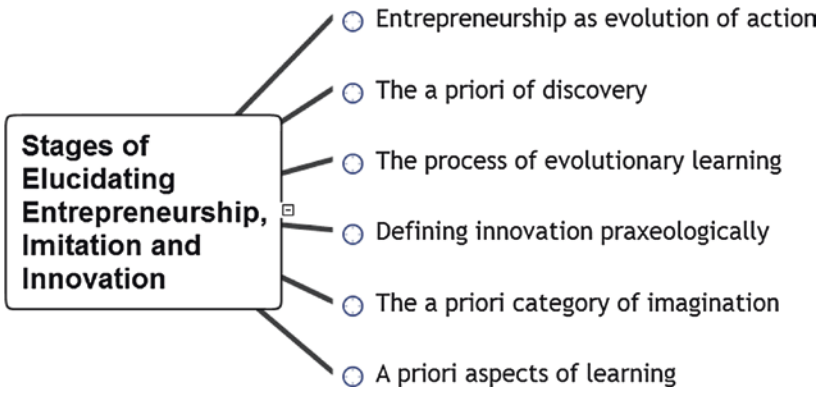

Fig. 2 Stages of elucidating entrepreneurship, imitation and innovation. *Source* Tonsberg 2015

place them in the framework of Praxeology due to their importance in action. This provides a precise foothold for further investigation of these matters. Accordingly, after discussing the alternative perspective of evolutionary economics, the entrepreneurship function will be examined in the sequence shown in Fig. 2.

Chapter 13
Praxeology Versus Social Evolution as A Priori Frameworks

From the perspective of economics, Khalil (2006) criticizes traditional approaches of being incapable of explaining entrepreneurial "creativity" and evolution, that is, "the ability of the agent to create more resources." This phenomenon is neither explained by the means-end paradigm of Praxeology nor the models of neoclassical economics. Rather, they may ascribe entrepreneurship to character traits of the actor. For example, Schumpeter refers to the traits of *daring to be different* and *being innovative* to facilitate creative destruction, while Kirzner refers to the trait of *alertness to price differentials* which drives the market toward stability, and others again refer to *leadership ability* and *risk taking* (Kirzner 2008; Robbins 1970, pp. 103–104; Schumpeter 1950, pp. 131–134). Alternatively, it is treated as coming from random external shocks, or simply as output of investments in research and development. The lack of explanation in such approaches is thought to be a major flaw, since "entrepreneurship is the main impetus of economic development, prosperity, and evolutionary change" (Khalil 2006).

It may seem from the above that entrepreneurial evolution needs a separate theory, perhaps a psychological rather than an aprioristic one; a theory of traits (Caliendo and Kritikos 2012; Carsrud and Brännback 2011; Lee et al. 2011; Okhomina 2010; Rauch and Frese 2007; Zhao et al. 2010). However, Khalil (2006) proposes that it is possible to have a single theory of action and evolution. This is done by explaining action not in terms of the means and ends categories but in terms of actors as organisms versus the environment, with a focus on the survival of the organism. Hence, the premise is a form of social Darwinism as expressed by Thorstein Thorstein Veblen (2003):

> The life of man in society, just like the life of other species, is a struggle for existence, and therefore it is a process of selective adaptation.

Based on this, the human action paradigm becomes one of "the relation between the actor and its environment," but "highlights that the actor's main challenge is to remain acting, i.e. remain in the game of survival" (Khalil 2006). This way, any

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action becomes entrepreneurial in the sense that it will involve a change in both parties; in the actor by an added experience, and in the environment by being acted upon. Hence there is evolution in every act on both parts (Khalil 2006). This is true to the paradigm of the evolutionary economics approach, where "properties of the whole stem from the structured relations and causal interactions between the individuals involved" (Hodgson 2007).

However, it has been clarified earlier that Praxeology also does not separate between entrepreneurship and every day action. Mises emphasized exactly this universality when he showed that the core difference between the imaginary constructions of the evenly rotating economy and the pure market economy is that the first is an ant hill, while the latter is one characterized by human action in that it involves all of its categories. There are elements of the categories of human action present in the ant hill, such as satisfaction, stagnant algorithmic plans, costs, interest, and human effort as well. However, by removing from it irregular change and uncertainty the following human elements are lost:

- Generatively imagining different ends;
- Generatively imagining different means;
- Generatively imagining various contingencies for the future (expectations);
- Changing values.

These are the core essences of any human action as they are not present in automated behavior, and they apply to all human action, not just that of a businessman.[1] Hence, for universal Praxeology the function of entrepreneurship represents all that involves generative imagination in human action. It becomes the function of imagining and implementing ways to reduce psychic felt uneasiness for oneself and for others under uncertainty. It represents what is uniquely human in all action.

On the other hand, the proposed evolutionary approach has its unique weaknesses. First, it reduces the goal of human actors to one of a very broad notion of survival. This is instead of the a priori category of felt uneasiness. However, the latter has the benefit of being subjectively understandable. For example, it is hard to see how buying candy is an act to "survive", but quite clear how it is driven by psychic felt uneasiness. Hence, attempting to explain the complex social web of human action as "survival" seems to raise more questions than it answers.

This holds true even if one was to say that felt uneasiness is a survival instinct. After all, the notion of felt uneasiness is known, but what that feeling would have to do with survival just raises another question; it merely adds an assumption that can neither be considered a self-evident axiom nor an empirically falsifiable proposition. Accordingly, it may instead be seen as simpler and more compliant with the principle of Occam's razor to consider action as a final cause as Praxeology does.

[1]Gunning (2003) hinted at the first two in his research on the concept of entrepreneurship stating that it differs from robotic behavior in that "it exhibits the characteristics of imagination, creativity and inventiveness."

Indeed, it is feared that a teleological evolutionary accounts for action of the sort suggested by Khalil (2006) will be no more than what Elster (2009) calls another evolutionary "just-so story."

Second, the suggested approach recognizes no significant difference between humans and other organisms, holding that "an organism is made up of organs, organs of tissues, and tissues of cells, and so on. Each actor in this hierarchical complexity seeks its own goal" (Khalil 2006). Hence, the suggested evolutionary approach does not emphasize the fundamental difference between human action and organ, tissue or cell reaction. It proposes to ignore all that is known about being human by virtue of being human such as the subjective notions of preference, means, ends, time and uncertainty. After all, this is information one has no introspective access to with regard to, e.g., animals or plants, even if they too have systems that are similar in some respects (Gunning 1989). Hence, Khalil's (2006) proposal is quite contrary to Praxeology's emphasis on what is distinctly human in action.

However, there is actually no need to choose between either an evolutionary approach or a praxeological one. Indeed, Praxeology already has an "actor versus the environment" dynamic in the notion that the environment causes dissatisfaction and thereby provides the impetus for action. Further, the key evolution theory axioms of variation, selection and replication can be integrated with Praxeology in order to benefit from the best of both action paradigms, as will be shown next.

Chapter 14
Entrepreneurship as Evolution of Action

It was stated earlier that the function of entrepreneurship is action or change agency in the face of uncertainty. Hence, in terms of the means-ends axiom it involves imagining different means and ends along with their potential future situations. This needs to be the starting point for further analysis of entrepreneurship, since all praxeological reasoning begins with the categories of action. From this base, three further observations may be made.

First, from a praxeological perspective the change will be either an imitation or an innovation of a means or an end. However, as has been pointed out earlier, the ultimate end of all action is to reduce psychic felt uneasiness. Hence, for the purpose of simplification it may be considered that imitations and innovations are restricted to means, and as such they can be entirely new, or they can be a new use of something previously known. However, in either case they would be new means from a subjective perspective.[1]

Second, change in human action can be seen as a process of learning. In this regard, Tarde (2011, Chap. I:II) pointed out that such learning involves two distinct elements a priori: imitation and innovation.[2] In other words, learning from others and learning by coming up with novel ideas. These novel ideas either replace the established or add to it something new in a process of substitution or accumulation (Tarde 2011, Chap. V) Hence, the levels of learning and innovation may be conceptualized as shown in Fig. 14.1.

Third, change involves evolution. In this regard, Hodgson and Knudsen (2010, p. 34) have argued that social evolution "must involve three Darwinian principles of variation, inheritance, and selection" as explanatory requirements. That is, there must be some explanation or mode by which social system features generate

[1]It was discussed earlier that a physical item can be many different things subjectively. For examle, a single stick could be a weapon, a tool for cooking or a decorative piece, etc.

[2]This is similar to Mises ideal types of entrepreneurship, the promoter and the imitator.

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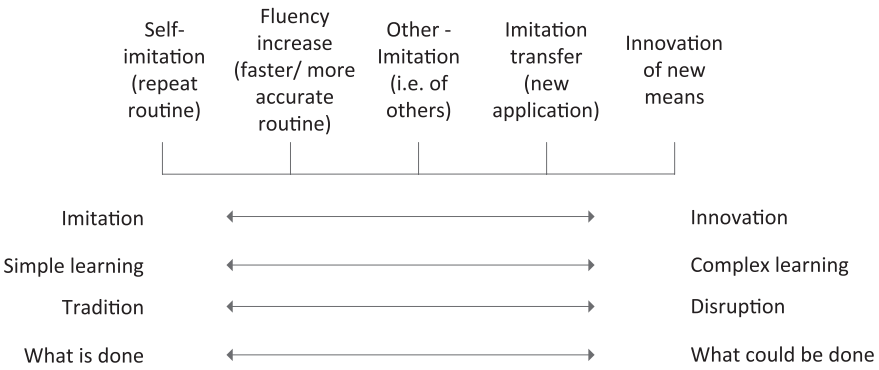

Fig. 14.1 Levels of learning and innovation in action. *Source* Tonsberg (2015)

and replenish variety, get copied or acquired, continue, or cease (Hodgson and Knudsen 2010, pp. 23, 26, 34–37). Indeed, these are a priori categories of change in any human action. After all, if there is no variability, no change is conceivable. Likewise, for change to take place it needs to occur by being selected somehow among other possibilities. Finally, the spread or continuation of any form of event involves replication of some form. Hence, one has three main parameters of evolution in action: variation, selection, and replication.

Accordingly, from the perspective of a sole purposive actor, the source of both action variation and replication would be imagination of alternatives, followed by the selection of one of them through choice, as illustrated in Fig. 14.2.

Accordingly, depending on what the actor selects, one will have either innovation or imitation *qua* variation or replication in action. This implies that at a social intersubjective level the phenomena of diffusion, variation, selection, and replication are explained by individual action through the subjective theory of value. To clarify this and expand further one may derive the following broad statements from the figure above:

1. At the root of evolution in action is imagination, as its function is to generate all alternatives for choice in speculation under uncertainty; whether they represent variation or replication. After all, to consciously imitate the action of others, or oneself, one needs to evaluate the action based on its concept or image in the mind.
2. Following imagination, selection is done by valuation and choice of action under uncertainty. This is the actual action of entrepreneurship. An example of this is the entrepreneur's function of allocating the factors of production in Misesian Economics as discussed previously.
3. Replication occurs when an actor repeats a previous action. Replication with diffusion occurs when an actor chooses to imitates others.
4. Based on an actor's experience or observation of the employment of innovated or imitated means, his knowledge changes through learning that may again affect his powers of imagination and valuation.

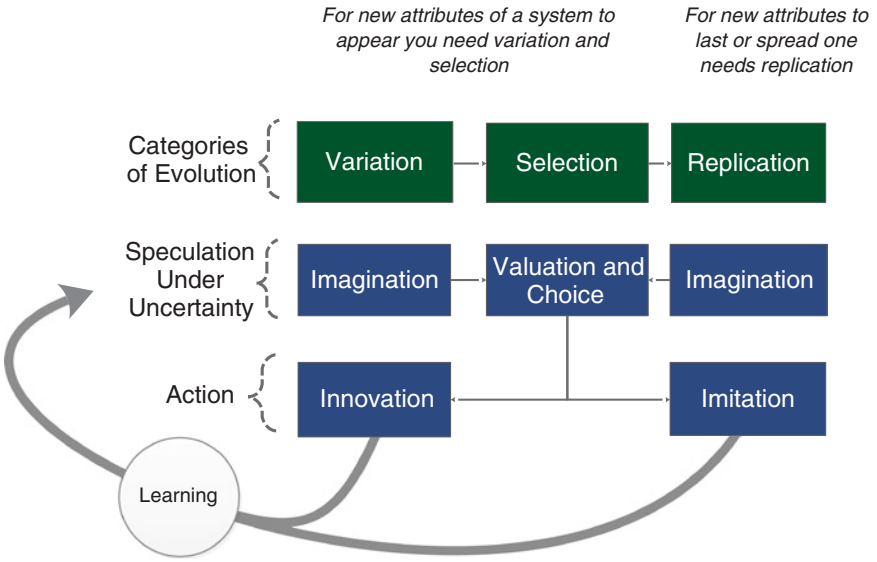

Fig. 14.2 The evolution of action. *Source* Tonsberg (2015)

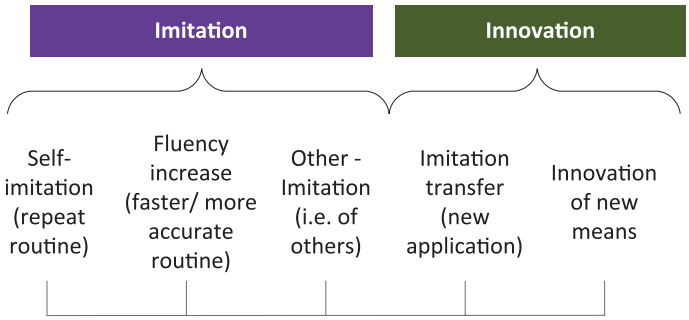

Fig. 14.3 Replication and innovation in action. *Source* Tonsberg (2015)

Hence, one may conceive of the entrepreneur function to have two essential elements. The first is the generation of alternatives, while the second is selection from them. Selection would involve some level of innovation or imitation as modes of entrepreneurship (Fig. 14.3).

In the below innovation and imitation through imagination will receive focus. It will be attempted to discover their a priori implications, even as a prerequisite to continuous empirical studies. This attempt begins with suggesting another a priori category of the structure of the mind that of discovery.

Chapter 15
The Ultimate A Priori of Discovery

Ideas are the starting point of all purposeful action, as it presupposes ideas of means and ends. In other words, the changes brought about by action are ultimately traced back to the faculty of reason. In the words of von Mises:

> …. we are at a loss to trace the changes brought about by human action farther back than to the point at which we are faced with the intervention of reason directing human activities. Production is not something physical, natural, and external; it is a spiritual and intellectual phenomenon. (von Mises 1996, p. 141)

However, from the viewpoint of deducing the logical implications of such reasoning, Popper (1965) has argued for a more fundamental a priori of structure of the human mind; that of the discovery of patterns. After all, discovery presupposes "a chosen object, a definite task, an interest, a point of view, a problem"; a principle to begin selection, an example being a newborn's inborn knowledge or expectation to be fed (Popper 2009). Similarly, thinking implies having ideas, and having ideas in mind entails perceiving them and this implies again having been able to discover them in the first place. Thus, discovery is a prerequisite of the mind to purposive thinking and acting on the external world.

In other words, the mind's capacity to see patterns, or resemblances and relations is logically prior to actually finding or using them. This includes the relational patterns of logic, causality, and teleology. However, it also includes the resemblance versus difference patterns of universals and particulars; of how we categorize things. To illustrate, consider the following words of Tarde (2011 Chap. I:I):

> But let us imagine a world where there is neither resemblance nor repetition, a strange, but, if need be, an intelligible hypothesis; a world where everything is novel and unforeseen, where the creative imagination, unchecked by memory, has full play, where the motions of the stars are sporadic…

However, this statement seems to not fully capture the implications of there being no resemblance or repetition. After all, without resemblances there would be

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no sporadic stars to notice.[1] There would be no universal notion of what a star is, or what sporadic means. As stated by James (1890, Chap. 12), "sameness is the backbone of our thinking". It provides grounds for inference, categorization, prediction, and selecting problem-solving strategies (Goldstone and Son 2005).

Thus, the ability to discover resemblance and difference patterns is a priori to any human knowledge of the world since no universal or particular notions, meanings, or concepts would be possible without it.[2] Categorization based on properties of events and objects would be impossible, and this would imply no thinking or learning or evolving knowledge. To argue against this would involve construction of arguments with sentences of words containing concepts referring to categories based on resemblances. As such it would involve a performance contradiction.

Because of the a priori character of categorization and conceptualization, no one denies that they are fundamental to mental life and communication (Medin and Rips 2005). For example, in the introduction to "Handbook of categorization in cognitive science" it is stated that categorization is the core of "the founding disciplines of the cognitive sciences: cognitive anthropology, cognitive computer science, linguistics, neuroscience, philosophy, and psychology" (Cohen and Lefebvre 2005, p. 2). One also finds the following statement:

> Categorization is the mental operation by which the brain classifies objects and events. This operation is the basis for the construction of our knowledge of the world. It is the most basic phenomenon of cognition, and consequently the most fundamental problem of cognitive science…. (Cohen and Lefebvre 2005, p. 2)

The a priori phenomenon of categorization, and by corollary the discovery of patterns, thus forms a qualitative theory that is even more fundamental than that of atomism or any other qualitative theory.[3] After all, such theories all assume categorization. For example, the Greek atomist idea of indivisible particles is a concept that leads to notions like shape, composition, divisibility, movement, and even more recent notions like quarks and the periodic table. These again make possible correlational notions of mechanisms, or explanations (von Hayek 1999; Thagard and Toombs 2005, pp. 179–180). But underlying all qualitative theories like atomism are the more universal notions of categories and concepts of meanings.

---

[1] What Tarde is describing is actually the imaginary case of a world without causal regularity, not one in which there are no resemblances.

[2] It is interesting to note that a related concept known as JND (Just-Noticeable Difference) occurs in the branch of experimental psychology known as psychophysics which focuses on sense, sensation, and perception. JND refers to the amount something must be changed in order for it to be detectable at least half of the time. This concept is also referred to as the differential threshold.

[3] Newell and Simon (1976) mention a number of important qualitative explanations from the "hard" sciences, such as "the cell doctrine in biology", "the theory of plate tectonics" in geology and "the germ theory of disease" in medicine. Of particular noteworthiness is the "doctrine of atomism" as the qualitative bases of chemistry that allowed a replacement by quantitative law, since "the underlying species of atoms are so simple and limited in their variety". This is unlike the case of "cells, tectonic plates, and germs" where variety is too great and qualitative principles remain of obvious importance (Newell and Simon 1976; Thagard and Toombs 2005).

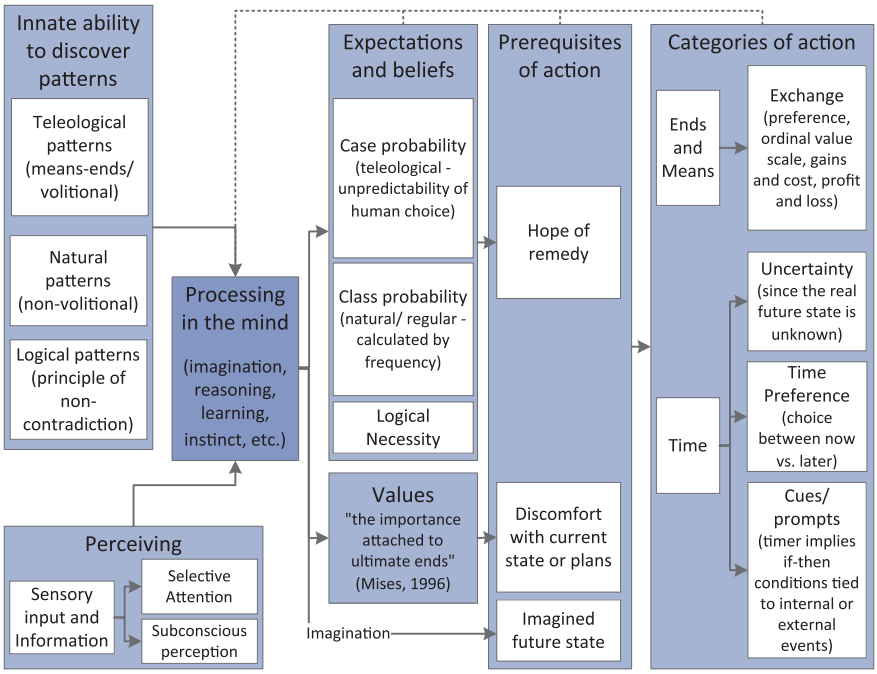

Fig. 15.1 The a priori structure of the mind and action. *Source* Tonsberg (2015)

Very important for praxeological purposes is the fact that without the a priori of discovery the following concepts would be unintelligible:

1. means and ends;
2. premises and conclusions, or;
3. cause and effect.

This means respectively that there would be no recognition of (1) teleological, (2) logical, or (3) empirical patterns. Accordingly, one can illustrate the relation between the a priori of discovery, the logical structure of the mind, the prerequisites of action, and the categories of action as shown in Fig. 15.1.

A remarkable aspect of the conception of discovery as a category of a priori is that it leads one to the somewhat perplexing notion that discovery is a prerequisite to logic, but logic as a thinking process is a prerequisite for discovering the prerequisite of discovery. This circularity may suggest that the ultimate a priori of the mind's structure is discovery and that nothing further can be deduced a priori.

Chapter 16
The Logic of Perceived Possibilities—Praxeology and the Process of Evolutionary Learning

Having elucidated the role of the a priori of discovery with respect to the associated patterns of logic, causation, and teleology, it is time to show how these relate to evolution in action through learning. This relationship can be seen through the mental experiment involving a human actor facing the world and orienting himself to his situation. Without experience he would be unable to say anything about what is possible or impossible in the world except by virtue of the principle of non-contradiction.[1] He may form a statement that violates this principle e.g.: "the rectangle shape is perfectly round." However, he cannot ever conceive such a meaning due to its inherent paradox. It is literally unimaginable and utterly impossible. Hence, the logic of non-contradiction along with the ability to identify similarities can be seen as a basic pattern recognition discovery system that allows discerning and categorizing observed phenomena (Fig. 16.1).

Hence, the principle of non-contradiction as a pattern helps him to distinguish phenomena from one another and conceive something about them as concepts. However, beyond identifying statements that are self-contradictory, he cannot say anything meaningful about these things. Without experience his mind would consider anything possible that is imaginable and free from contradiction; any conceivable concept or relation between concepts could be realizable.[2] Flying mountains, upwards flowing rivers, and seas of mercury turning to orange juice remain possible to the mind alone.[3]

[1]Of course, the principle of identity may be argued to be prior to that of non-contradiction, but this debate is not of great concern to the current discussion.

[2]Possible as in "why not?", not as in "sure one could!".

[3]Note that the form of the argument here is an imaginary construction of a mind without worldly experience beyond what is necessary to grasp the principle of non-contradiction.

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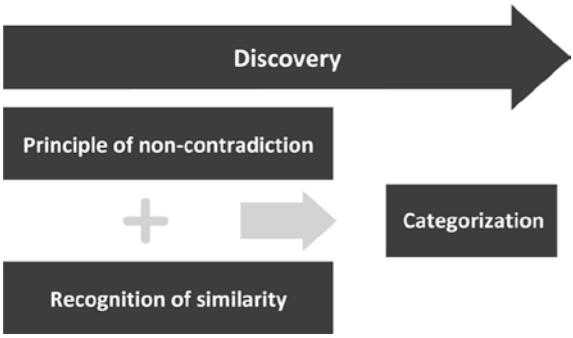

Fig. 16.1 The recognition of categories. *Source* Tonsberg (2015)

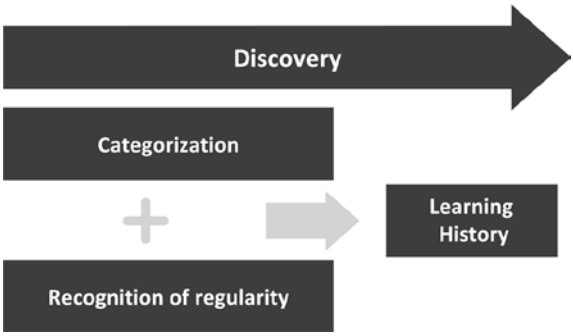

Fig. 16.2 Learning through experience. *Source* Tonsberg (2015)

Experiencing the regularity of a limited number of repeating factors, however, allows adoption of notions for what is normally conceivable. In the words of von Hayek (1999, p. 131) in his book "The Sensory Order":

> If it were not possible for practical purposes to isolate quasi-self-contained substructures, containing no more parts which significantly affect the relevant result than can be reproduced, or matched point by point, by 'representative' elements within our organism, prediction and purposive adaptation would be impossible.

Thus, through the observation of the five senses and communication with others a human being starts to recognize the regularity of the world.[4] He recognizes that similar things tend to behave similarly in certain respects and that they do so *because* they are similar (Goldstone and Son 2005). In this way, he learns about the causal regularity that Mises calls a category of human action. This learning can be illustrated as shown in Fig. 16.2.

In this way, the human actor develops a revisable set of beliefs regarding what is impossible in this world as well as what is unlikely, doubtful, likely or even necessary (Rey 2005). Moreover, through his own mind's teleological structure

[4]We are now introducing change, like Mises does with the evenly rotating economy, to understand what will happen.

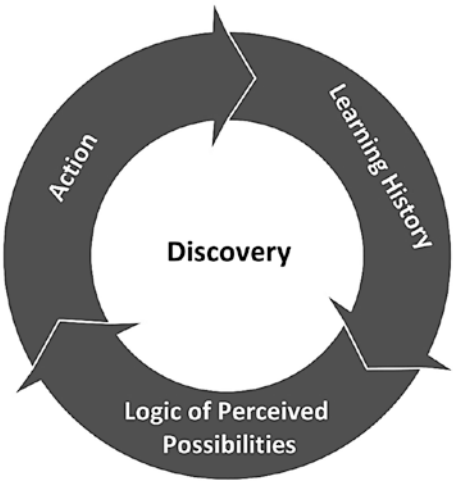

Fig. 16.3 The relationship between learning and action. *Source* Tonsberg (2015)

he learns what to expect from other human actors as well. He senses the mental and physical abilities of himself and others. Of course, this network of beliefs changes over time. Not the least, theories of how the world works are abandoned or amended based on reflecting on past action.

In other words, through worldly experience the human actor develops a logic of perceived possibilities; a complex network of interrelated more or less vague ideas, concepts, and propositions along with case and class probabilities for the world outside. Through this system the human actor perceives conceivable means and ends that he chooses from according to preferences and evaluations (Lachmann 1977). It thus is an evolving and amendable system for problem solving that constitutes purposeful action, as illustrated in Fig. 16.3 as a simplified presentation of a very complex process.

Accordingly, the human actor continues "to deliberate beforehand over future action and to reflect afterwards upon past action" and thereby grows his knowledge (von Mises 1996, p. 177). Thus, associated with every actor in any situation, in any active present, there is a continuously evolving logic of possibilities that reflects his learning. According to this system goals and plans are continuously set, amended, and abandoned. In this way learning, goals, and plans are bound to one another in purposeful action.

Chapter 17
Defining Innovation from a Praxeological Perspective

The logic of perceived possibilities provides an interpretive structure to the elements of all past sensory impressions. This organization constitutes evolutionary learning for the categories of means and ends and, hence, the link between learning and action, or evolution and Praxeology. However, it was also argued earlier that action from the viewpoint of learning can be seen as either imitation or innovation,[1] as illustrated in Fig. 17.1.

By corollary then, the logic of perceived possibilities also constitutes the source of innovation and imitation through imagination.

Imitation in action is quite simple conceptually. After all, it is a matter discovering experientially how to repeat one's own action or that of others, in whole or in part, gradually, or in an across-the-board manner, e.g., through tools such as deliberate practice (Ericsson 2006b). However, it still remains to elucidate what, if anything, can be said a priori about action as innovation and thereby how praxeological reasoning can contribute to further clarify this part of entrepreneurship.

This elucidation may be attempted through a more simplified perspective on the mind's content than that of the logic of possibilities. The first step is to present four assumptions that lead to the realization that the concept of innovation is reducible to ideas that are novel concepts and novel relations between concepts. The following are these assumptions along with their rationale:

1. Innovations are novel goods. After all, the Subjective Theory of Value implies that innovations are perceived as useful by the actor that chooses them as the preferred course of action to reduce psychic felt uneasiness. In other words, they are goods in the widest sense of the term and they may be of a higher or lower order. This is a praxeological definition of an innovation because it connects to a category of action, in this case the category of psychic felt uneasiness.

[1]This was illustrated in "Fig. 14.3" on page 135.

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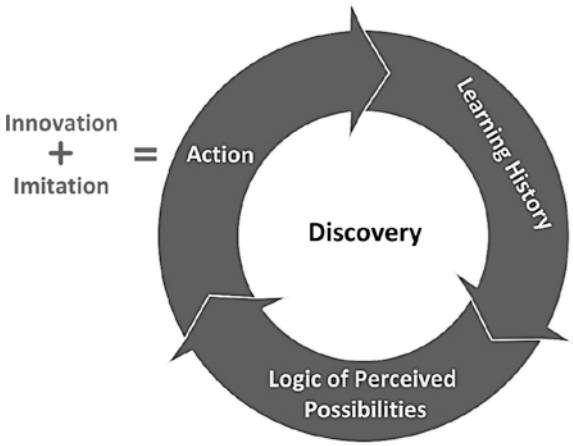

Fig. 17.1 Action as imitation and innovation. *Source* Tonsberg (2015)

2. All novel goods are either new ideas or physical manifestations of new ideas. This is because, as has been repeatedly stated, means and ends are products of the mind. They are means and ends by virtue of being interpreted as such by a human being, and this can be true of both ideas as well as conventional goods and services. As stated by von Mises (1996, p. 92), something "becomes a means when human reason plans to employ it for the attainment of some end and human action really employs it for this purpose."
3. All novel goods are communicable in the form of language.[2] After all, even though speech is primarily a social phenomenon, "[t]here is no thinking which does not depend on the concepts and notions of language" (von Mises 1996, p. 41). Moreover, to be of social significance, ideas need to be communicated inter-subjectively or similarly directly designed or acted out in the outside world, i.e., not remain in someone's mind alone.
4. Ideas expressed though language are concepts and relationships between them. First, there must be concepts because without concepts no meaningful subjects and predicates can be formed and there would be nothing to communicate. Second, there must also be elementary and essential relations in ideas. This is true even though concepts with relations form another concept, because not all concepts can be broken down into more elementary concepts lest one faces a problem of vicious infinite regress. Hence, ideas must consist ultimately of concepts that the mind has not broken down into more elementary elements.[3]

[2]After all, it seems reasonable to assume that if it can be built it can be communicated, and that if it can be communicated it can be expressed in language. In any case, this is also a shortcut to avoid ontological issues that may be raised and are beyond our purposes here.

[3]This shows that concepts are not simply creatures made up by the mind alone.

Fig. 17.2 Innovation comes from novel concepts or novel relations. *Source* Tonsberg (2015)

> An important corollary of this is that novel ideas can be generated through relationships between old ideas, as well as between new and old.[4]

According to these four points just made, innovations are limited to novel concepts or novel relations, as illustrated in Fig. 17.2.

Such novel concepts can be directed by action toward reducing psychic felt uneasiness. Hence, it may be said that innovation as action begins in the imagination as an innovative idea that springs from novel concepts or novel relations in the mind. Having conceptualized innovation praxeologically,[5] and thereby also clarified the importance of imagination, it is now time to turn to what can be said a priori about imagination as it pertains to innovation.

[4]Indeed, "the ability to acquire and manipulate relational concepts" is of fundamental importance to human intelligence (Doumas and Hummel 2005). For one, Vygotsky (2004) stressed this combinatorial nature of innovation, stating: "It is this ability to combine elements to produce a structure, to combine the old in new ways that is the basis of creativity." Another psychologist that stressed this is Koestler (1964, pp. 119–120) with his theory of bisociation.

[5]That is in terms of the categories of action.

Chapter 18
The "A Priori" Category of Imagination

Imagination can be considered the mind's generation of ideas. Accordingly, it is an a priori of action because an image of a future state is a prerequisite of action as has been mentioned earlier. Further, without generative imagination there can be no new concepts or relations between them, only robotic imitation.[1] Hence, it may be claimed that innovations in society are products of imagination and they are, according to the preceding argument, reducible to novel concepts or relations between them.

Now, the mind is limited in content; human beings are not omniscient. Practical experience makes this obvious. The mind contains ideas that come and go and is never complete in knowledge.[2] Assuming that the mind is limited, and that new ideas constitute concepts and relations between them, there are a priori only two conceivable ways to increase the mind's output of desirable ideas. These may be referred to as the *input postulate* and the *process postulate* and are, respectively,

1. to provide the mind with new input to process, or;
2. to manipulate the process of imagination on ideas that are not new, e.g., through problem-solving techniques.

These are two a priori axioms that have significant implications for thinking as a purposeful human action. They form an a priori qualitative theory which proposes that the purposeful quest for innovation has two fundamental elements of success as illustrated in Fig. 18.1.

[1]Note that what is being done here is applying an imaginary construction of actors without imagination. The purpose is to elucidate the relationship between imagination and innovation.

[2]There is no need for discussing this further in this context. Very few people would claim otherwise and elucidating the logical reasons for this assertion would involve a long and complex metaphysical digression.

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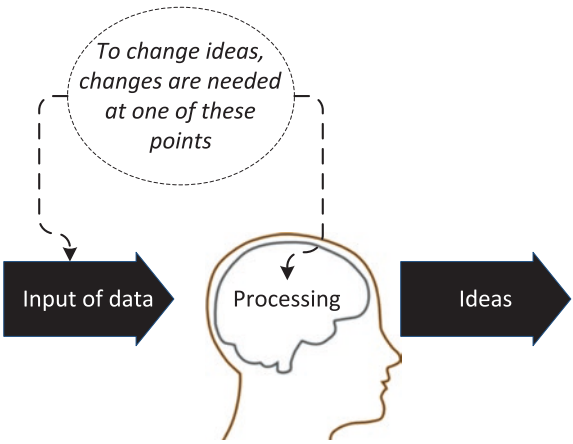

Fig. 18.1 The imagination input and process postulates of innovation. *Source* Tonsberg (2015)

Regarding the first element, the *imagination input postulate*, one knows that new ideas from the world outside come either from the transformation of sensory "stimuli into observation and experience" or from communication of the thoughts of others (von Mises 1996, p. 177). As an example, especially the communicated knowledge of others is of extreme importance to cumulative scientific and technological progress.

Regarding the second element, the *imagination process postulate*, one knows that how one consciously processes ideas in hand can be purposefully manipulated as actions of the mind, e.g., by problem-solving strategies. As stated by Nietzsche (2002):

> All great men were great workers, untiring not only in invention but also in rejecting, sifting, reforming, arranging.

Thus, inspiration happens when "productive energy has been dammed up for a while and has been hindered in its outflow by an obstacle," it is "capital piled up" (Nietzsche 2002). It is input and process reaching a point of entropy, a point of a reorganization of some knowledge. Naming it "capital" as Nietzsche did is pertinent since from the viewpoint of Praxeology novel ideas are indeed the fruit of higher order goods expended in terms of purposeful mental action. This much one can say a priori. However, whether there is a quantitative critical mass for information input or a point of diminishing returns and where those might be can only be learned a posteriori. The same is true for the type of information input and for the kind of purposeful processing of ideas, as well as for how all of this correlates with various personal and situational characteristics. Complicating the matter is the subconscious efforts involved. It has for example been shown that sleep can facilitate inspiration. (Wagner et al. 2004).

As an example of the pervasiveness of empirical reality, according to the *input postulate* it would under certain ideally coordinated conditions hold true that diverse social input would lead to better problem solving, as has been

demonstrated mathematically by Page (2007). However, this is complicated by the “messy” social dynamics of actors with different personalities, agendas, and various coordination difficulties (Klein and Harrison 2007). Hence the best combination on the continuum between social input and diversity versus solitude is an empirical problem, perhaps a more or less unpredictable datum. Nevertheless, the a priori postulates above do provide some practical guidance in terms of a qualitative or meta-theory of innovative thinking.

Chapter 19
Some A Priori Aspects of Learning

It may be argued that one cannot say much a priori about the processes of purposeful learning beyond what has already been stated about innovation. A substantial part of learning involves unconscious processes that are outside the scope of Praxeology. Rather, it belongs to psychology to investigate these matters.

However, it may be proposed that gaining new knowledge is essentially innovation at the personal level since there is no means of acquiring another human being's thoughts other "than to think them over again" (Mises 1996, p. 177). Moreover, one can say a priori that

1. At any point in time mental capacity for memory and imagination is limited, and;
2. Entrepreneurship implies imagining different ends and means in different potential future situations;
3. Therefore, mental capacity for entrepreneurship is limited by memory and imagination.

To consume less mental energy, plans for achievement include the recipes, the cook-book knowledge of "every-day thoughts" in which we are usually "less interested in the antithesis 'true-false' than in the sliding transition 'likely-unlikely'" (Schuetz 1943). In light of this, one can make the following broadly empirical statements:

1. Automatic habitual action requires less mental capacity than thinking that involves a high level of focus;
2. One can only purposefully think about one issue at a time. However, it is possible to engage in automatic habitual action while engaging in purposeful thinking about another matter, e.g., having a conversation while driving a car.

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Accordingly, a high level of automated behavior frees up capacity available for purposeful entrepreneurial thinking.[1] This makes possible a mental division of labor that can presumably be done both for individuals and groups of individuals. The elements are:

1. Design work tasks to facilitate automatic behavior for handling routine tasks;
2. Delegate tasks to technology where possible;
3. Delegate simpler tasks to people with less entrepreneurial capability;
4. Delegate routine tasks to work situations with less entrepreneurial requirements.

The development of expertise, for example, which facilitates more automated decision making should, *ceteris paribus*, free up capacity for entrepreneurship. Accordingly, facilitating routine and imitation where possible is another a priori source of freeing capacity for innovation where it is most needed.

A cautionary note here is that a priori one can only assume that entrepreneurship requires a minimum available mental capacity for purposeful thinking. However, more is not necessarily better. The point of diminishing returns can only be determined empirically and may even be situationally dependent. For example, there is empirical evidence that insight-related problem solving performance is better when a person is relatively tired (Wieth and Zacks 2011).

This concludes the elaboration of the a priori aspects of entrepreneurship from a praxeological a priori perspective. It now remains to show an application of this framework to leadership.

[1]This notion is similar to the idea of "cognitive load" in learning psychology, which focuses on "instructional methods to decrease extraneous cognitive load so that available cognitive resources can be fully devoted to learning" (van Merriënboer and Sweller 2005).

Part IV
The Human Action of Leadership

In this part a possible praxeological framework of leadership will be elaborated as a demonstration of how praxeological deductive theorizing proceeds. It may be noted from the outset that leadership study is different from Praxeology's main field of economics in at least three fundamental ways. First, in leadership action there may be no prices involved to actually calculate gains and losses. Hence, the less concrete notions of psychic gains and losses will need to suffice. Second, in leadership action one is not always dealing with the unifying force of the monetary profit motive, a very important part of explaining how millions of actors in an economic system are coordinated. Third, a leadership situation can be more narrowly focused if it aims to explain the coordination of a particular leadership function, not only the coordination of unrelated actors in an entire economic system.

With the above in mind, the following will discuss leadership by defining it and elucidating some of its core issues in terms of the categories of action, such as means, ends, value, deliberation, and uncertainty in order to derive a praxeological meta-theory of leadership. Accordingly, a key assumption underlying this discussion is that leadership can be improved through science even though it deals with phenomena of case probability, i.e., complex situations confounded by the unpredictability of human choice. As shown previously, scientific knowledge for such phenomena is achieved by deducing a priori categories and employing them in qualitative prediction based on situational assumptions. These assumptions may in turn be supported by available empirical evidence.

What is novel in the discussion that follows is first of all the view on leadership as a form of individual action, or choice understood through the subjective theory of value. As such, it is in reality incidents of exchange between two entrepreneurs seeking what they see as best for them under the circumstances. Hence, leadership and followership is incidental and depends on who instigates action from the other for the particular instant at hand, and this may change from one moment to

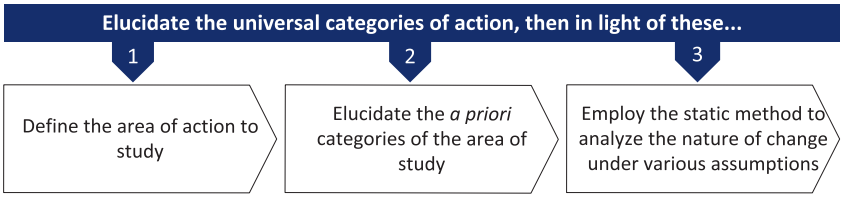

Fig. 1 The procedure of the Praxeological method. *Source* Tonsberg, 2015

the next regardless of perceived position or role. In other words, the praxeological principles of individualism and subjective value dictate what may be referred to as leadership exchange theory.

A second novel feature is the explicit search for a priori knowledge regarding leadership. These are to serve as meta-concepts that are useful in understanding particulars. Fig. 1 summarizes what has been elucidated earlier regarding the fundamental steps of Praxeology in developing meta-concepts and theories.

As seen in the figure, the procedure of praxeology starts with the elucidation of the universal categories of action, which has already been completed in Part II. Hence, the discussion below begins with defining leadership praxeologically, i.e., in terms of the categories of action. After all, praxeology is a deductive method that begins with these categories.[1]

Once leadership is defined, the elucidation of its categories in light of the universal categories of action such as ends, means, valuation, time and uncertainty will follow. One needs to explain the nature of these under the assumptions peculiar to leadership. The aim is to identify the categories of leadership action and then show what they imply in changing circumstances through the static method.

Accordingly, the leader–follower relation is first analyzed in terms of the prerequisites of action and communication as well as the Subjective Theory of Value (STV). After this, the implications of uncertainty are discussed, with some extra attention being paid to the dichotomy of habit versus entrepreneurship and the coordination of knowledge. This is followed by a presentation of power as a category of leadership action that is explained in terms of the STV. In the tradition of methodological individualism the focus in all of this is on a simple dyadic

[1]As mentioned previously, all praxeological theorems are "products of deductive reasoning that starts from the category of action…" (Mises 1962, p. 44).

leader–follower relationship in order to develop a firm understanding of the role of purposeful human action in leadership. Based on this foundation some theoretical implications for the meso- and meta-levels of analysis are raised. Ultimately, it is hoped to achieve from this a general yet practically useful framework to understand and evaluate leadership action in light its *expressed goals*.[2]

[2]As stated by Mises (1996, p. 651): Nobody is called upon to establish what could make another man happy. What an unaffected observer can question is merely whether or not the means chosen for the attainment of these ultimate goals are fit to bring about the results sought by the actor.

Chapter 20
Conceptualizing Leadership

The field of leadership[1] has been approached in numerous ways (Bass and Bass 2008, p. 60). This multitude of approaches has led to many theories that vary in their emphasis on variables related to leaders, followers, or the situation (Yukl 2010, p. 30). They also differ in terms of being at the individual (micro), one on one (dyadic), group (meso) and organizational (meta) level (Mintzberg 1998; Yukl 2010, p. 33). At a meta level, attempts are made e.g. to explain influence without direct interaction, such as the "cascading" of CEO influence down the organizational hierarchy (Yukl 2010, pp. 23–24). Even the definition of leadership has been made in terms of a number of factors, such as "traits, behaviors, influence, interaction patterns, role relationships, and occupation of an administrative position" (Yukl 2010, p. 21).

However, the definitions of leadership are for the most part centered on the notions of purposeful influence on others towards some objective (Goethals et al. 2004, p. 300). Moreover, most would agree that leadership is about the influencing process between leaders and followers, and how this process is explained in terms of behaviors, traits, perceptions, and context (Antonakis and Cianciolo 2004, p. 4). Hence, a theory of leadership will be concerned more or less with

[1]Leadership is a phenomena related to the division of labor. It is about how tasks are divided and delegated across individuals though instigation, subjective evaluations of exchange and response in terms of compliance, non-compliance and compromise. It is also about the formal and informal institutions that arise in this regard with or without a plan contrived by an individual or a group. The division of labor is caused mainly by the natural facts of the "inequality of men" and the "unequal distribution of the nature-given, nonhuman opportunities of production". A third cause is situations where required work "exceeds the forces of a single man and requires the joint effort" of many, but this causes mainly "transient alliances" and not lasting social cooperation (von Mises 1996, pp. 157–158). However, one may perhaps also add to these three the opportunity cost of doing something oneself as opposed to employing the effort of others.

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1. Decision-making and planning in terms of the task to accomplish;
2. Getting various followers to complete their part of the task;
3. How situational perceptions form in leaders and followers.

All of these can be related to explaining causes of follower compliance. This compliance is presumably a function of the follower and his environment. Consequently, theories will put varying emphasis on follower response to

1. Traits of leaders;
2. Behavior of leaders;
3. Other environmental factors.

Accordingly, one may argue that about five major types of theories have developed over the years. These are presented briefly in order to establish an overview of how leadership is commonly conceptualized and theorized.

20.1 Trait Theories of Leadership

The study of leadership began with the perspective of leader roles and ideals; looking at leadership in terms of the mythological leader type or role in the social structure. This was initiated in the second half of the nineteenth century by the first researchers on leadership, namely, Galton and Carlyle (Zaccaro 2007). They brought traits and charisma theories as the first perspective on leadership used in scientific study, a perspective still relevant today after a major reemergence in the 1980s and beyond as transformational theories (Antonakis and Cianciolo 2004, pp. 6, 10).

However, the role of personal traits as predictors of effective leadership is incomplete (Hoffman et al. 2010). E.g., one might find that some leaders obtain results in spite of scoring low on formalized or idealized leadership traits (Hogan and Kaiser 2005). In addition, there is a high level of correlation between the traits as independent variables, which makes it difficult to draw practically useful conclusions from the research (Yukl 2010, p. 71). A further difficulty is that the term leadership has a wide range of applications, and is not only used to refer to ideal personalities or spectacular feats. Moreover, one can say that it is unlikely that a person is charismatic, transformational, or acting according to ideals all the time, or in all contexts. In other words, trait theories oversimplify highly contextual and complex phenomena.

20.2 Behavioral Leadership Theories

As early research on traits showed disappointing results, there was a shift of focus towards the behavior of leaders. After all, observable behaviors ought to provide more objective and measurable variables than the traits that are inferred from them

(Maass et al. 2001). These theories did enjoy some stronger empirical support, and also provided guidelines for practical application (Antonakis and Cianciolo 2004, p. 7; Yukl 2010, pp. 31–32). Two important studies in this regard are those of Michigan and Ohio State (Katz et al. 1951; Stogdill and Coons 1957). Example theories are:

1. The Managerial Grid Model of Blake and Mouton (1964), which prescribes leadership behavior along two dimensions: consideration for people, and initiating structure, i.e., task clarity and orientation. The best leaders are proposed to score high on both (Blake et al. 1964).
2. Douglas McGregor's Theory X, which states that people need extrinsic motivation through reinforcement, and Theory Y, which states that they are intrinsically motivated and only need suitable working conditions. It also adapts Drucker's concept of Management By Objectives (MBO) (McGregor 1957).

20.3 Situational Leadership Theories

After the emphasis on behavior and traits, there was growing recognition that environmental and social factors are variables that must be considered in leadership, along with those of personality traits and behavior. This gave rise to five major situational theories (Van Seters and Field 1993; Yukl 2010, pp. 173–180):

1. The Contingency Theory of Fiedler (1967), which studied situations in terms of the quality of leader–member relations, the clarity of task structure and the degree of leader positional power to reward and punish. These are then matched with the leadership trait of being task versus relationship oriented to see which trait is most positively correlated with performance (Fiedler 1970, 1972).
2. The Path-Goal Theory of House (1971), which held that a leader's job was to show the way to stated goals. In the 1996 revision, the theory includes more than two dozen propositions that relate to the claim that effective leaders act to compensate for subordinate trait and situational deficiencies to facilitate work satisfaction and performance at all levels. These behaviors include path-goal clarifying, achievement orientation, work facilitation, psychological support, interaction facilitation, group-oriented decision process and others (House 1996).
3. The Normative Theory of Vroom and associates, which emphasized decision making styles in terms of subordinate participation (Vroom and Jago 2007; Vroom and Yetton 1973). This latter model can also be classified as one that looks at the distribution of power and influence (Yukl 2010, pp. 132–163).
4. The Situational Leadership Theory of Hersey and Blanchard emphasizes matching leadership behaviors in terms of concern for production versus people[2] to the followers' level of maturity. That is, their ability and motivation to perform independently (Graeff 1983; Hersey and Blanchard 1979).

[2]These are the behaviors of the Blake and Mouton's grid.

5. The Substitutes For Leadership Theory of Kerr and Jermier (1978), which emphasizes situational factors that may eliminate the effectiveness of leadership style in improving performance (Graeff 1983; Howell and Dorfman 1981; Yukl 2010, pp. 173–180). Examples of such factors are ability, subordinate need for independence, task feedback, intrinsic satisfaction, and organizational formalization of tasks (Keller 2006).

20.4 Information Processing Perspective on Leadership

Another group of theories looks at leadership from an information processing perspective. These emphasize interaction patterns, role relationships, sensemaking, and how leaders reach legitimacy by matching expectations (Chemers 2000). For example, Leader–member Exchange Theory (LMX) attempts to describe how a leader develops a relationship with a subordinate (O'Donnell et al. 2012). They also stress the notion of implicit leadership and followership theories used by people in an organization to form expectations of leaders and followers (Johnson 2004; Shondrick and Lord 2010). From this information perspective, contingency and situational theories emphasize the dyadic and group process relations between the leaders and followers, whereas traits and behavioral theories are mainly dyadic (Yukl 2010, p. 40).

Of course, a focus on sensemaking and role relationships brings into question whether or not there is such a thing as a "leader person". For example, one can argue that in almost all conceivable cases a real person is sometimes a follower, sometimes a leader, and at yet other times merely going about his personal affairs. This realization has made modern theories more inclined towards studying leadership as a shared identity, and led to the growing study of leader–follower relations and how people become identified as followers or leaders in different situations (Antonakis and Cianciolo 2004, pp. 6–10). A more recent and complex model in this regard is the Identity-Based Process Model of Leadership Development, which describes how leader and follower identities develop in a social setting (DeRue and Ashford 2010).

20.5 Transformational Leadership Theories

As mentioned, charisma and trait theories made a come-back under the general label of "transformational leadership". This label springs from the notion of Burns (1978, p. 4) that there are two types of leadership, transactional and transformational. The latter is proposed to have a potential transformational function in society by inspiring others and cater to their higher needs and moral causes (Burns 1978, p. 4). However, these theories go beyond mere traits and attempt to integrate personality, behavioral, and situational variables to explain how great leaders

inspire followers to work for a vision of the greater good, beyond transactional leadership, which relies on punishment and reward systems (Bass 1990; Van Seters and Field 1993). With their emphasis on charisma, these theories are influenced by the theories of Weber (Bass 1999; House 1976; Miner 2005). Major theories of the transformational or change-agent type may be said to include:

1. Charismatic Leadership Theory of House (1976) which emphasizes the relational nature of charisma and studies the leader, follower and situational characteristics that cause it, such as assertiveness and self-confidence in the leader, communicating a vision that inspires shared values, having a relationship of mutual trust and respect, etc. (Klein and House 1995). These charisma-related variables have also been integrated into the Path-goal Theory as an update to the latter (House 1996).
2. Transformational Leadership Theory of Bass, which emphasizes the causal variable of charisma to provide a sense of mission, pride, respect and trust; inspiration for high expectations and focus of efforts; intellectual stimulation to promote rational thinking; and individualized consideration in terms of attention and advice (Bass 1990, 1999).
3. Servant–Leadership Theory may arguable be included here as it emphasizes the transformative power of the leader. However, it proposes that this is achieved by the leader's focus on serving his followers, while commitments to organizational objectives come as a consequence (Greenleaf 1973; Stone et al. 2004).
4. Kouzes and Posner's Leadership Challenge Model could also be classified as transformational with its emphasis on charisma. Based on asking what people like in their leaders they identified traits such as being honest, competent, forward-looking, inspiring, and credible (Kouzes and Posner 2007). Based on this research they proposed five practices of exemplary leaders: (1) challenge the process, (2) inspire a shared vision, (3) enable others to act, (4) model the way, and (5) encourage the heart (Kouzes and Posner 2010, pp. 26, 29–31).

The theoretical perspectives on leadership mentioned above can be summarized briefly as shown in Table 20.1.

Hence, on one extreme there are trait theories that emphasize the importance of leader traits, while at the other extreme are complex theories that emphasize the complexity and uncertainty of leadership success. Accordingly, one may

Table 20.1 Major theoretical perspectives on leadership

Leadership theory	Methodological emphasis
Traits and charisma	Leader traits like intelligence and charisma
Behavior and style	What leaders do or should do
Contingency/situational	Situational variables as determinants of actual or prescriptive behavior
Information processing	Processes of interaction, role relationships and sensemaking
Transformational theories	Follower inspiration based on trait, behavioral and situational factors

Source Tonsberg (2015)

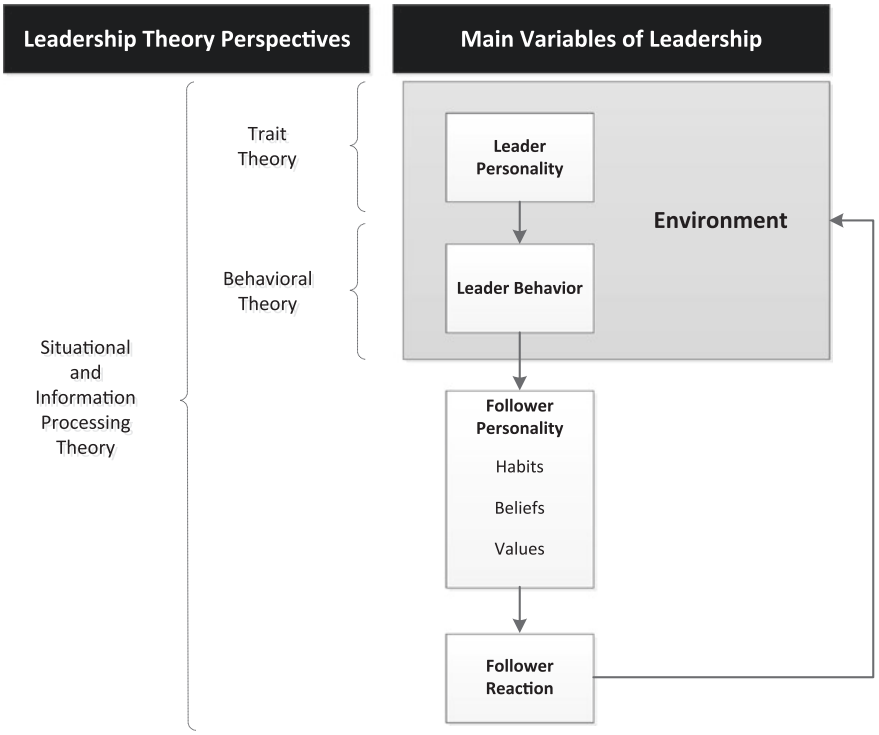

Fig. 20.1 Major factors and theoretical perspectives on leadership. *Source* Tonsberg (2015)

conceptualize the major theoretical perspectives as placed in a causal chain as shown in Fig. 20.1.

For the purpose of our discussion it is assumed that *leadership theory aims to explain follower action*. This perspective does not attempt to distinguish between management and leadership as two different things.[3] Further, it includes both "good" and "bad" leadership, even if the ultimate goal of leadership would often

[3]It may be argued that they are two sides of the same coin and thus the attempt to distinguish between them may confound more than it clarifies. For example, Antonakis and Cianciolo (2004, p. 5) claimed that leadership "is purpose driven, resulting in change based on values, ideals, vision, symbols, and emotional exchanges". On the other hand, management "is objectives driven, resulting in stability based on rationality, bureaucratic means, and the fulfillment of contractual obligations" (Antonakis and Cianciolo 2004, p. 5). But this raises a number of questions. E.g. what is the difference between objectives driven and purpose driven? Why are emotional exchanges exclusive to leadership and bureaucratic means exclusive to management? Why is "stabilizing" considered management and "change" considered leadership? Isn't stability a valued ideal and the typical vision of many people? Indeed stability and security is one of the basic human needs mentioned by Maslow and mentioned by Hobbes (2006, Chap. 13) as one of the 3 basic sources of human conflict, saying: "in the nature of man, we find three principal causes of quarrel. First, competition; secondly, diffidence; thirdly, glory. The first maketh men invade for gain; the second, for safety; and the third, for reputation".

be to achieve the common pursuit of organizational goals in the most voluntary manner possible.[4] Unlike the transformational approach, the praxeological leadership view is value free in the sense that it looks at the appropriateness of leadership in light of its stated goals, regardless of what they might be. However, for the purpose of developing a praxeological perspective on leadership, a more detailed conceptualization is needed in light of the categories of action. Finally, unlike the common theoretical perspectives mentioned, the praxeological approach is concerned with the action of leadership, and not with the leader or follower as a role or person.

[4]von Mises provided some insight in what constitutes bad or good leadership over the long term. He pointed out that slavery more or less disappeared because a "system of production in which the only incentive to work is the fear of punishment cannot last" (von Mises 2007, p. 59).

Chapter 21
Conceptualizing Leadership Action Praxeologically

In the following the leadership act will be conceptualized in terms of the categories of action. Apart from the universal categories of action there are three preliminary assumptions regarding leadership action that will be made as follows:

1. It involves two praxeological functional types,[1] namely the leader and the follower;
2. It has the purpose of coordinating the actions of two or more individuals towards some end in the mind of the leader;
3. It involves inducing the leader's desired action from the follower.

Based on these preliminaries, the first categories of action to consider are the prerequisites of psychic felt uneasiness, goal image, and hope. They need to be considered both for the leader and for the follower. With respect to the leader, one can say the following:

1. Psychic felt uneasiness: a Leader-actor (L) is a person who attempts to reduce uneasiness through instigating a potential Follower-actor (F)[2] to achieve a purpose (P_L).
2. Goal image: L instigates F toward P_L by some action response R.
3. Hope: L hopes that a response R from F will contribute to P_L and that F will respond.

[1]I.e. representing action functions in a leadership situation, not ideal type persons.

[2]Note that De Jouvenel (1963, p. 30) has a definition of political science that could just as well be one for leadership in general: "I hold the view that we should regard as 'political' every systematic effort, performed at any place in the social field, to move other men in pursuit of some design cherished by the mover."

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Table 21.1 Implied actions of leadership

Category of action	Implied action
1. Preference: *L* prefers engaging *F* in *R* to get P_L over perceived alternatives	Defining purposes
2. Ends and means: *L* has a plan for achieving *P* though *R*	Planning to reach them under uncertainty
3. Time preference: *L* prefers engaging *F* in *R* to get P_L to perceived alternatives for a time *t*	Interacting with the environment to induce action in *F*
4. Uncertainty: *F* may not perform *R*	Follow-up to ensure the completion of *R*

Source Tonsberg (2015)

Based on the categories of action one can also say the following about the action of leadership:

1. Preference: *L* prefers engaging *F* in *R* to get P_L over perceived alternatives.
2. Ends and means: *L* induces another actor *F* to act as a means towards an end.
3. Time preference: *L* prefers engaging *F* in *R* to get P_L over perceived alternatives for a time *t*.
4. Uncertainty: *F* may not perform *R*.

These last four points above actually imply four distinct acts for L as illustrated in Table 21.1.

The first two of these implied acts can be conceived as prerequisites to leadership action. The fourth is a part of ongoing leadership in a changing environment and will be discussed later. However, it is the third of these that appears as the distinctive act of leadership: the act to induce action in others.

Based on the above analysis it may be said that:

Praxeological Leadership Definition

> A leader is a person who attempts to reduce felt uneasiness through the means of communicative interaction in order to achieve action through others towards a particular purpose.

It is this action that will be the basis for further praxeological analysis. Defining leadership action in this way includes almost all common use of the word. It also stresses the relativity of the leader-follower relation and avoids ideal types. Further, it is highly nominalist in aiming at the most basic element of what constitutes leadership: the leadership act. Moreover, it is subjective in the sense that it recognizes that all action begins in the mind with a goal and a plan. Finally, it is value free as it focuses on the act and not on its desirability.

To understand leadership at a higher level one needs to understand the basic elements of individual action from where it springs. This is particularly important when new social needs require new strategies and institutions; in order to surmise how these will work out in practice one needs to understand how their micro level leader-follower dynamics will likely be (De Jouvenel 1963, p. 40). This basic element of leadership action in accordance with the above discussion constitutes:

1. a Leader (*L*) seeking
2. a Response (*R*) that contributes to his

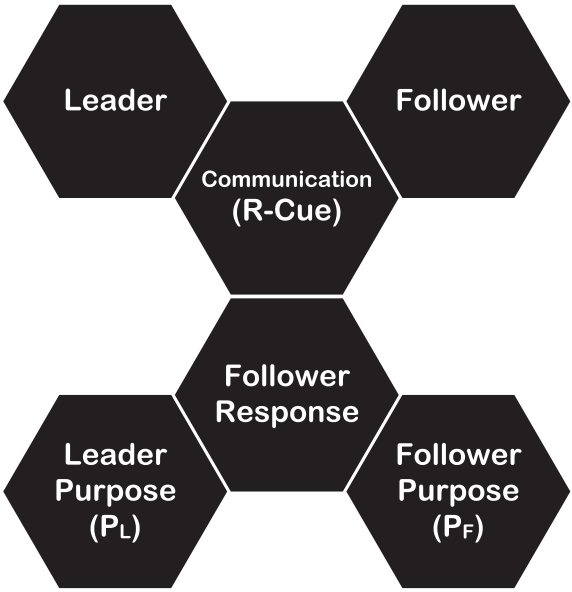

Fig. 21.1 The constituent parts of the basic element of leadership action. *Source* Tonsberg (2015)

3. Purpose (P_L) in a
4. Follower (F)
5. By means of communicating to instigate R (an R-cue).[3]

A successful act of leadership is initiated when R matches (P_L) as well as the purpose of the Follower (P_F) through communication. However, it is not necessary that P_L is identical to P_F, because R could serve more than one purpose. The basic element of leadership action can thus be illustrated as having the parts shown in Fig. 21.1.

However, whether a single such act is *conventionally* considered leadership or not depends on the context. For example, L may be of inferior power status in relation to F according to social conventions and thus not be considered "a leader". Moreover, whether F will contribute or not is highly situational and cannot be known with absolute certainty, even if L is considered "a leader". By avoiding such conventional ideal types of follower and leader, one may be able to capture the dynamics of leadership and followership in a more precise manner.

In the above, leadership action has been conceptualized through the categories of action mainly from the viewpoint of a leader. However, as the above figure

[3]This is similar to the "elementary political action" of De Jouvenel (1963, p. 10) De Jouvenel conceived of it as a verbal suggestion followed by a signal of compliance versus non-compliance and response: "First, A suggests to B the action H, and we call this instigation; secondly, B performs H and we call it a compliance, or he does not and we call it a non-compliance" (De Jouvenel 1963).

illustrates, the crucial part of successful leadership is the follower response to leadership communication. Hence, the below discussion will focus on explaining this response and the accompanying role of communication. This is followed by a further elaboration of the subjective theory of value regarding followership.

Chapter 22
The Follower Purposeful Response

In light of the prerequisite categories of action *F* will not attempt R *unless*:

- Psychic felt uneasiness: *F* believes he can reduce uneasiness through *R* or its consequences.
- Goal image: *F* has understood *R* (what *L* desires *F* to achieve) in a manner congruent with *L*'s understanding.
- Hope: *F* believes that *R* is possible.

Given that these prerequisites are met, the subjective theory of value dictates that if *F* does not act, it is because *F* believes *R* is too costly in light of what is sacrificed of perceived alternatives, i.e., the choice of compliance is according to *F*'s ordinal rank of subjective preferences.[1]

By also including the category of time and that of cues, one can add the following conditions for *F*'s response:

1. *F* has been cued to the possibility of acting on *R*. That is, he has noticed it as an alternative.
2. *R* is valued highest of its perceived alternatives for a time *t* that *L* accepts.
3. *R* is cued for action at the time *t*.
4. Persisting with *R* is valued highest of its perceived alternatives during *t*.

From the follower *F*'s perspective, the category of uncertainty involves two concerns. The first is if he will actually be able to perform *R*. The second is if *R* will actually lead to fulfill the end he has in mind, i.e., the Purpose of the Follower (P_F). As indicated previously, once he has hope for both of these, the remaining uncertainty in his mind becomes an element of subjective value and preference. If *F* dislikes the uncertainty of R it will reduce his appraisal of *R*. If he likes it, it will raise his appraisal.

[1]This ordinality is one of the factors that makes predicting behavior based on questionnaires that evaluate attitudes imprecise, as has been discussed earlier.

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It may be wondered at this point why Mises spoke of hope but not variables related to subjective probabilities of success, such as control beliefs, expectancy, instrumentality, and self-efficacy. The reason may be that once there is hope, there is no need to assume that a higher probability of success makes action or motivation more likely. This cannot be known a priori, because it is plausible that some challenges attract. Hence, Praxeology treats subjective probabilities as meanings judged by an actor's value system of likes and dislikes, aversion and attraction, gain and loss. Indeed, based on some 400 studies conducted, Locke and Latham (2002) assert that specific and difficult goals bring more consistent and higher performance than being told "do your best". They found that the relationship between difficulty and performance is positive and linear at an effect size of 0.5 given commitment and ability (Locke and Latham 2002). In other words, risk may be valued in and of itself and as such one cannot predict preferences based on a straight forward utility maximizing probability calculus.

Chapter 23
The Category of the Response Cue (R Cue)

Since a leader's thoughts, intentions and so forth cannot be observed, he has to rely on speech, behavior and other environmental variables to communicate messages that affect F's interpretation of Request R. This communication will either be direct or indirect. Direct is through L's own behavior or speech through various media. Indirect involves manipulations of the environment or behavior of others through various media.

In short, L instigates F to perform R through some form of communication. That is, L instigates F to do R via R cues. An effective R cue can be illustrated as shown in Fig. 23.1, including the category of time.

An R cue can be seen as a complete or partial teleological argument meant for F that is made more or less explicit or merely implied or hinted at. However, the question remains whether F will

1. perceive it,
2. understand it,
3. be convinced, and finally,
4. do it.

Hence, if a follower has received a directive to perform, but has not complied, then there is either a problem with attention, the understanding of the goal image, the belief in its achievability, the desire to reach the goal, or the ability to act.

However, during the process of communication, beliefs and desires may change for both the leader and the follower. Thus, communication relations involve reciprocal "production and circulations of elements of meaning" (Foucault 1983). This means the key to understanding leadership action is to understand the dynamic communal interplay of:

- communication,
- perception,
- attention,

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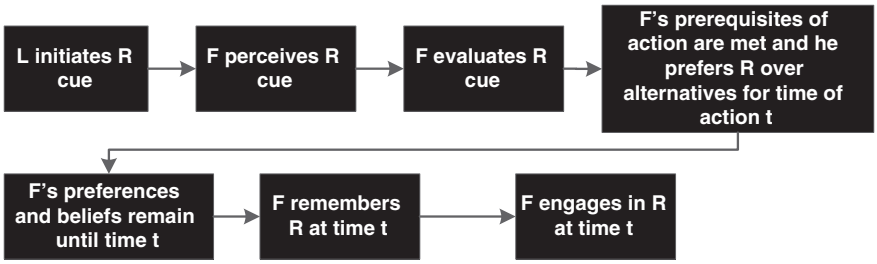

Fig. 23.1 An effective R cue. *Source* Tonsberg (2015)

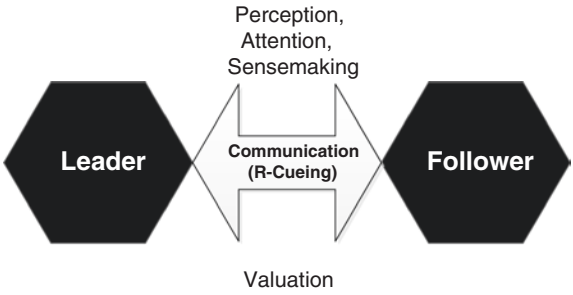

Fig. 23.2 The interplay of communication, sensemaking, and valuation in the follower–leader relationship. *Source* Tonsberg (2015)

- sensemaking, and
- valuation.

This interplay can be illustrated as shown in Fig. 23.2.

However, to illustrate all the functions for which R cues may be needed, let it be assumed that F did not engage in R. After all, in Praxeology L and F are actually both entrepreneurs seeking to reduce felt uneasiness through the means available and according to their values. The following are possible R cue purposes:

- Cueing:
  - Modify F's attention so that he re-evaluates or notices R as an alternative
- Hope:
  - Convince F that R can be done technically
  - Convince F that he is able to perform his role in R
  - Convince F that R will be effective in bringing consequences desired by F
- Goal image:
  - Make clear what L requires of characteristics in R in terms of what, why, when, how, where and who
- Felt uneasiness:
  - Convince F that R is of benefit to him in itself or in terms of consequences in light of his values
  - Convince F to change his values

- Subjective evaluation and preference:
  - Convince F that the benefits of R to F are higher than its costs and of greater gain than any alternative action for a particular time period.

All of the above-mentioned are subjective factors relevant to the mind of F and his decision to engage in R or not. Hence, the leader act is one that aims to affect F's subjective interpretation of a given R in terms of such factors as defined intensively and extensively by F's attention. After all, attention is the gateway to preference by which elements that affect action emerge in the mind. However, it should be kept in mind that attention itself is ultimately cue based as argued earlier. Hence, the communication process of leadership is one of cueing followers towards the desired response.

The above introduces the a priori categories of human action to leadership theory. This has been done by analyzing the most elemental unit of leadership: the leadership action consisting of the leader L instigating F to an action response R through communicating an R cue. Through the categories of action the subjective theory of value for followership has been briefly mentioned, but due to its importance a more detailed elaboration follows next.

Chapter 24
The Subjective Theory of Value and Following

The basic premise of the subjective theory of value for followership has already been stated: F will not act upon a R cue from L unless F sees R to be his own subjective preferred choice over perceived alternatives for time t. The corollary of this is that *leadership is a form of exchange*. This is because follower F will only comply with Leader L's R cue instigation if he sees it as the preferable alternative. He exchanges it for the alternative of not complying. On the other hand, to L the R cue is a means to engage F. L chooses this over alternatives, such as attempting to engage F in another action. Moreover, from a perspective of action over time, F's engagement in R has implications for further compliance in the future. This is not the least in an open society where L faces competition with the instigations of others. Hence, the sacrifice of future alternatives may be perceived as well.

As has been emphasized repeatedly, action is always about the category of means and ends, which imply beliefs and values related to an uncertain future and limited by attention. Hence, the main mental factors influencing subjective preference can be illustrated as shown in Fig. 24.1.

With the above factors in mind, F's preference ranking of R is in light of it being a means to a valued end state for F himself. These could be viewed as the essential possibilities of R as a means

- Accepting R as a means (i.e., the acceptance itself):
  - F accepts R because he does not want to show disobedience to L (or someone else) or he wants to please him (or someone else);
  - F accepts R because he wants to avoid losses for not responding;
  - F accepts R based on valuing obedience to L in itself F wants a material reward contingent on performing R, such as a salary or a bonus.

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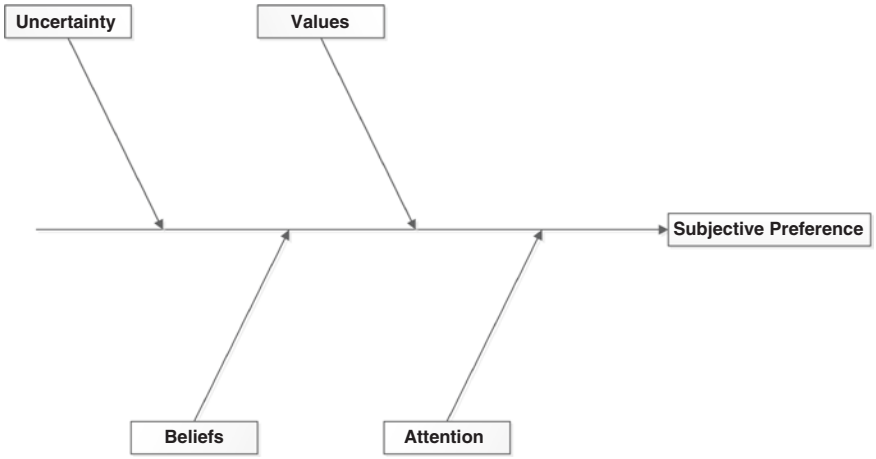

Fig. 24.1 The interrelated factors that affect subjective preference. *Source* Tonsberg (2015)

- The work itself as direct means to reduce felt uneasiness:
  - F accepts R because the work involved brings him pleasure, like the sensory enjoyment of Mihaly Csikszentmihalyi's flow, or sense of competence, or autonomy (Csikszentmihalyi and LeFevre 1989; Ryan and Deci 2000);
  - F accepts R because the work involved helps him to avoid another situation, like depression, or a bad crowd;
  - F accepts R because he likes something in the social or physical environment associated with the work.
- The performance output of the work as a direct means:
  - F accepts R because the output is valued by him, such as helping the poor or the elderly;
  - F accepts R because the output prevents something he would like to see less of, e.g., products to reduce environmental pollution.
- Accepting or performing R as an investment:
  - F accepts R to build social capacity for action, i.e., social capital, such as establishing a network of relations, getting favors, or building status;
  - F accepts R to build personal capacity for action. For example, he will learn a valuable skill or gain valuable knowledge either for work or some other valued purpose.

Other perspectives on the types of perceived value of R are possible. For example, Weber (1978, pp. 212–213) spoke of obedience by custom, affectual ties, materialistic interest, idealistic solidarity, or belief in legitimacy. Another way to categorize these reasons for acting on R was elaborated on by De Jouvenel (1963, pp. 69–82) and may be considered of particular interest for leadership studies. He considered the motivation to respond to L as being a combination of F's

motivation to perform R and his motivation to obey L. This approach raises the issue of the power of L which will be discussed later.

The above also cannot be claimed to be a complete list of types of subjective R value. Rather, it attempts to cover some major categories of what could make F value R within the action framework of means-ends. The role of the effective R cue in light of these and similar teleological constructs is:

> To induce F to see R as a means to a highly valued end so that his preference for a time t is to engage in R and forego all other perceived alternatives, i.e., the perceived opportunity cost.

In the simplest case the inducement of F to engage in R may simply involve telling him. At other times it may include efforts to:

1. find out what F highly values and;
2. prompt him to see the connection between R and these values;
3. convince him that R is his most valued action for time t in terms of his perceived gains and losses.

However, it should be noted that the cost of engaging in R is not only saliently negative aspects of R itself, such as effort or resources to be sacrificed. It also includes the alternative choice that F may perceive as valuable that he needs to either sacrifice or postpone. Very importantly, all these factors are subjective and limited by attention. More attention will be given to the unusual, or when a problem-solving tool is used to guide attention, such as the WRAP process[1] (Heath and Heath 2013, p. 23). On the other hand, if attention is limited to conditioned cues, then preference will be repeated according to past patterns. This assertion may again raise two important concerns, namely, how follower habits fit into the framework of subjective valuation and how it relates to the spirit of innovation in entrepreneurship. These important issues are considered next in context of the action category of uncertainty.

[1]WRAP is an acronym for "Widen your options", "Reality-test your assumptions", "Attain distance before deciding", "Prepare to be wrong" (Heath and Heath 2013, p. 23).

Chapter 25
Uncertainty

Leadership begins in imagination by associating mental images of possible courses of action and future states and then ranking their uncertain outcomes.[1] Like all action it involves speculation in terms of ordinally ranked case probability[2] and is the main implication of the action category of uncertainty for leadership. However, a further implication is that L may act to reduce uncertainty, but he cannot eliminate it completely. The type of action L undertakes to regulate the uncertainty he perceives depends the subjective value of acting to reduce it.

The cause of uncertainty is lack of knowledge about the future. On the other hand, predictability is increased through knowledge of teleological or natural regularity. All action involves speculation based on the balance between teleological and natural irregularities versus regularities as illustrated in Fig. 25.1.

Natural regularity can be better understood by empirical research, technology, and education to reduce uncertainties. However, in leadership action as defined in the discussion at hand, teleological predictability is the main concern. The first case to consider in this regard is that of dyadic interaction between F and L. From

[1]This expression borrows heavily from Shackle (1952, p. 1) who stated: "By expectation I mean the act of creating imaginary situations, of associating them with future named dates, and of assigning to each of the hypotheses thus formed a place on a scale measuring our belief that a specified course of action on our part will make this hypothesis come true."

[2]Speculation in expected benefit has elements of self-efficacy, which is the belief a person has that he can perform tasks. Self-efficacy has three dimensions, namely, magnitude of task difficulty or complexity, strength of confidence, and generality of the span of similar tasks covered by the belief (Stajkovic and Luthans 2003). However, expectation of benefit is wider than self-efficacy in the sense that it also includes the belief in whether or not performing the task will lead to a certain outcome, or so called performance-outcome expectancy. It also includes the link between effort level and expected outcome, namely effort-performance expectancy as well as expectancies about the locus of control, which is the belief about the extent an event is within one's control (Stajkovic and Luthans 2003).

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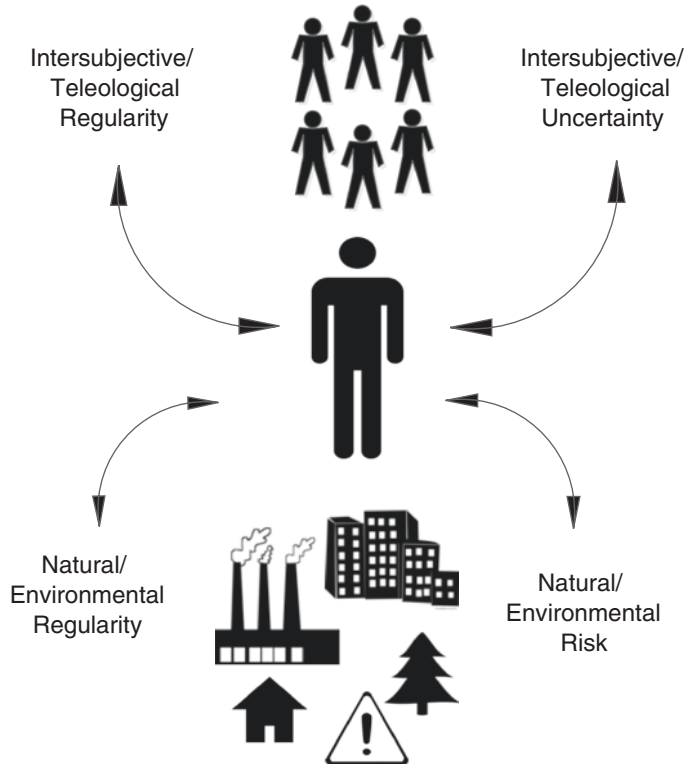

Fig. 25.1 The variables of speculation in human action. *Source* Tonsberg (2015)

L's perspective uncertainty in the leadership action involves at least seven points in time. They represent whether F will:

1. Notice the R-cue;
2. Understand the meaning of the R-cue;
3. Accept R;
4. Engage in R;
5. Proceed correctly with R;
6. Persist with R, and finally;
7. Succeed with R.[3]

There are several ways to reduce follower related uncertainty at these stages, such as:

- Establishing individual habits and group routines to increase predictability of results;
- Employ people by contract to make manpower more predictable;
- Educate people regarding the culture of their organization;

[3]In addition to the points of uncertainty related to F achieving R comes the uncertainty of whether R will contribute to the leader's ultimate purpose P_L. This is another risk factor that often needs monitoring through feedback channels.

- Use freelancers to reduce the risk of future financial commitments;
- Train or attract followers that can substitute and step into particular roles;
- Make contingency plans for reaching ends and substituting means;
- Ensure F qualifications and personal characteristics;
- Manage motivational factors to ensure performance and persistence;
- Make sure the goal image of R is clear to F;
- Provide skill and procedure prompts as well as reminders;
- Get and provide frequent feedback.

Through these examples it can be seen that the category of uncertainty explains many leadership behaviors. However, the seven points in time mentioned above make it clear that *feedback cues* are of particular importance to reduce uncertainty in leadership action. After all, only through feedback can one make sure that R is performed. Note also that when R is complex or time consuming, or involves many external factors, uncertainty will tend to increase. Many of these issues are situational. However, there are two universal issues with regard to uncertainty and predictability that will be discussed in more detail below. The first is that of balancing the efficiency and predictability of habit and routine against the need for personal initiative and entrepreneurship. The second is the coordination of knowledge and expertise to reduce ambiguity.

25.1 Follower Habit and Entrepreneurship

Teleological or intersubjective predictability can be increased by habit. That is, by habitual beliefs, principles, rules, values and routine responses. In fact, as De Jouvenel (1963, p. 88) points out, a person without predictable responses would be considered an unpredictable man and thus of no character. In defense of habits he states:

> 'Prejudice' is a word of ill-repute: but this is absurd; it merely means that we have some built-in principles by virtue of which some cases need not be brought up before our [figurative internal] court of justice, as the decision of these cases is implicitly given by our principles. This spares us a lot of work, and it spares others who deal with us a lot of conjecture, it allows them to say: 'No need to ask: B will refuse' or 'If asked of B, it will be done.' (De Jouvenel 1963, p. 95)

In this way efforts can thus be focused on entrepreneurial action by encouraging predictability through habit, not the least heuristics and rules for decision making.

Decreasing ambiguity by establishing habit is therefore an important leadership task. This is not only because it increases intersubjective predictability, but also because it enables the scarce resource of attention to be focused on unique problems and to catch opportunities that may never return. In the words of Whitehead (1911, p. 61):

> It is a profoundly erroneous truism, repeated by all copy-books and by eminent people when they are making speeches, that we should cultivate the habit of thinking of what we are doing. The precise opposite is the case. Civilization advances by extending the number

> of important operations which we can perform without thinking about them. Operations of thought are like cavalry charges in a battle—they are strictly limited in number, they require fresh horses, and must only be made at decisive moments.

Accordingly, routinization and scripted execution of orders has an important role not only in reducing uncertainty but also in improving productivity. That is, as long as there arise no new problems requiring a decision or a need to form a new plan (von Hayek 1945). However, habit is a double edged sword for the leader because of its ease. Compliance at a whim is convenient and therefore attractive, but it may also kill innovation in entrepreneurship, follower feedback and lead to a stagnant organization under an autocratic leadership style.

Hence, leadership wanders between two extreme alternatives of coordination. The first is where people choose to cooperate as individuals according to their personal advantage, as is done in a pure market economy. The other is where the choices are made for them by an authority (Mises 1996, p. 147). The first involves a high degree of entrepreneurship on part of the follower, the second little or none. Similarly, the first may involve a high degree of imaginative thinking and innovation, while the other is prone to automation.

Accordingly, leadership action R cues can be seen as either activating argument[4] or habitual responses. In the former case, the R-cue works through triggering thinking that results in changes in subjective preference rankings. On the other hand, some action can be undertaken without much involvement of reason. This is if the R-cue does not activate an evaluative argument with high awareness. The process from R cue to action can be illustrated as shown in Fig. 25.2.

Habitual action is a cue based response without much argument involved if any. Accordingly, it is based on what is normally perceived in the environment. However, it can also involve habitual preferences or values. For example, Cialdini (2001) has through his research on influence identified six principles of persuasion that are based on common heuristic cues of automatic decision making:

- Scarcity: People value what's scarce.
- Authority: People defer to experts who provide shortcuts to decisions requiring specialized information.
- Consistency: People fulfill written, public, and voluntary commitments.
- Social proof: People follow the lead of similar others.
- Reciprocity: People repay in kind.
- Liking: People like those like them, who like them.

Yet, habitual action is still action in the sense that it can be substituted or altered, as has been discussed. After all, Praxeology does not assume technical rationality or perfect information. In this sense engaging in habit simply means that *no better alternative action has been perceived* for the moment in question. Further, even when deliberate reasoning is involved, a decision can rarely, if ever, include a full consideration of all possible alternatives. This is because alternatives are a

[4]The term argument will be used to refer to conscious deliberate reasoning, such as evaluating the costs and benefits of a decision.

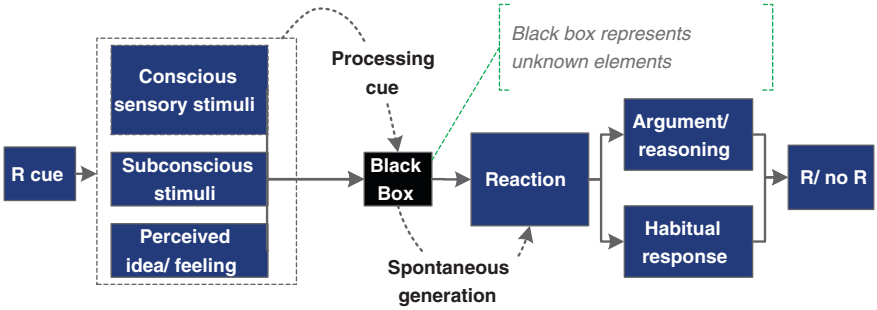

Fig. 25.2 The process from R cue to response R/no R. *Source* Tonsberg (2015)

matter of imagination and can thus be generated in uncountable number and form. Accordingly, even careful decision making is constrained by more or less automatic thoughts and ideas. It is for such reasons that it has been argued earlier that cues are an a priori category of all action.

Moreover, as has been mentioned above, carefully reasoned decision making involves expenditure of attention as a scarce resource and the opportunity cost of not spending it elsewhere. From this perspective, habit can be seen as the cue based chosen alternative over careful argumentation. It is as if the actor surmises "if I do not detect anything unusual, I will do x upon detecting cue y." This is a particularly plausible perspective when dealing with habits that have been acquired through learning. It can even be viewed as technically rational in so far as being a script employed for certain situational cues that saves the precious resource of attention at the risk of missing important cues in seemingly similar situations. It is in other words a tradeoff between saving the scarce mental resources of attention and thinking through imitation and repetition at the risk of bad decisions. It is at the opposite end of the spectrum to entrepreneurship which is about innovation and doing things better. The relationship between mental cost and entrepreneurship can be illustrated as shown in Fig. 25.3.

On one extreme there is repetition and habit, such as routine labor. Next is imitation of others to learn their routine. This of course involves some degree of thinking about change from the learner and can be considered the first degree of entrepreneurship. This is followed by the application of means used in one area to another area and by innovation of entirely new means as the opposite extreme to self-imitation.

As mentioned, a leader is often not only interested in the accomplishment of a carefully measured routine task, he is also interested in more or less discretionary performance beyond this minimum standard. Such performance can be at several levels of the scale of innovation, e.g., at the self-imitation level increased performance would involve using the same means while increasing the quantity of output per effort, or reducing error. Moreover, it is often not defined ahead of time, but left as a more or less ambiguous expectation of the follower. This is for a good reason.

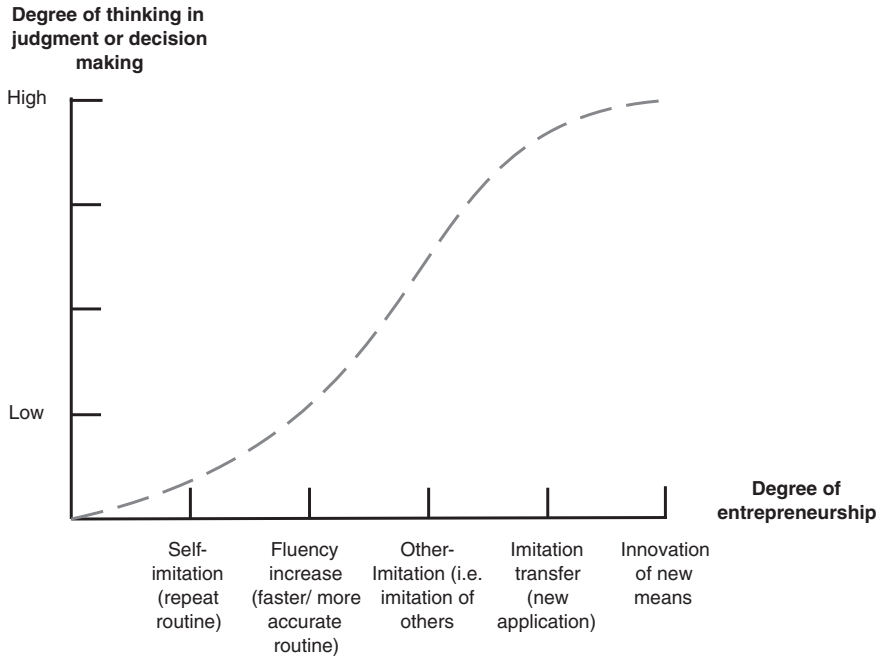

Fig. 25.3 The relationship between mental energy expenditure and entrepreneurship. *Source* Tonsberg (2015)

After all, the possible improvements that could be made are not known ahead of time, especially those that are highly innovative.

It is therefore necessary to keep innovation targets ambiguous to a certain degree. It is interesting to note that the free market system has an advantage over a more planned economic system in this regard. This is because it has the goal of profit which is a very broad goal since profit is simply a measure of value. Hence, it is as if every member of a free market society is simply told to "generate value." It seems that any economic activity that cannot simply be measured in terms of profitability will be more difficult to construct without the risk of restricting innovation unfavorably.

25.2 Coordination of Knowledge

While habit is important for the reasons mentioned, the call for increasing entrepreneurship is strong in a modern knowledge based economy. This is because tacit and explicit knowledge is distributed unequally among many people at different

times and in different places in an environment of rapid change. Such ambiguity and uncertainty increases the need for more personal imagination and initiative among followers (Nickols 1990). After all, the nature of knowledge work is that it needs to be configured and cannot be prefigured. That is, the nature of knowledge work is that the task at hand is often ambiguous. Its exact ends and means are often left to the worker to discover (Drucker 1999; Nickols 1990).

In such a case the leader and the follower is each an entrepreneur and both need to be aware of opportunities (Kirkpatrick 1983). The entrepreneurial function becomes both the allocator and the allocated. In fact, in a modern economy of knowledge based work; an employee is a capitalist of his own human and social capital. This means that leaders need to encourage workers to build these assets for productivity and innovation purposes.

In an economy as a whole the requirement for a minimum of profit along with freedom of enterprise can be effective in encouraging entrepreneurship on a wide scale. However, a leadership situation often lacks an unambiguous yardstick of profit and loss. This opens up for two fundamental problems in the practice of leadership. The first is how to direct people so as to configure their own work optimally. The second and related is how to direct people toward beneficial innovation. There probably are no simple or universal answers to these issues. It involves balancing between too much and too little follower freedom of decision. This balance depends on the situation and what the leader considers valuable along with the innate skill of the follower.

In spite of this, it should be noted that ambiguity can be reduced and decisions improved through knowledge sharing; by making it available to the right person at the right time. However, the problem is that such sharing cannot always be routinized in an environment of rapid change and innovation. Rather, one needs even more personal entrepreneurship in this regard. This holds true also for sharing ideas for problem solving and innovation in general, not only to reduce ambiguity. After all, ideas exist in the imagination of individuals. It is not the group that thinks, but the individuals in it. Hence, solving problems or innovating *together* implies exchanging ideas to facilitate one another's thinking. In fact, Page (2007) has argued through mathematical modeling that diversity of people in a group leads to greater diversity in ideas and better problem solving.

However, conscious problem solving and information sharing can be seen as purposeful action. As such, they can be understood through the subjective theory of value. Consequently, the act of providing information and ideas to others is an action with an opportunity cost; giving an idea away involves the cost of sacrificing any advantage of not doing so. Moreover, ideas can be a form of capital; something that can be used later to achieve something of subjective value. Hence, the purpose of the individual may not coincide with the apparent purpose of a group in a problem solving situation due to lack of unifying incentives. Accordingly, one may end up with a tragedy of the commons situation where the group members'

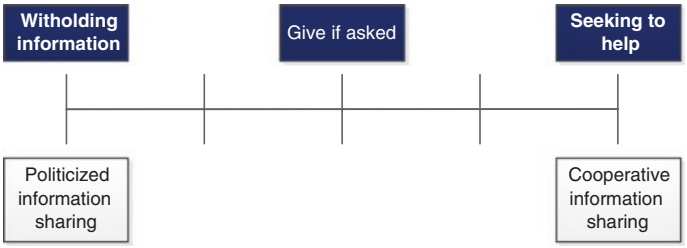

Fig. 25.4 Scale of information sharing approaches. *Source* Tonsberg (2015)

pursuit of their individual goals leads to a conflict with the common good of all group members.[5]

In other words, the subjective theory of value implies that an important element of successful group problem solving is that as many members as possible prefer to share relevant ideas they may have over withholding them. In other words, sharing must be seen by the individuals in the group as more likely to lead to higher personal satisfaction than any perceived alternative. Information sharing can accordingly be seen to be on a scale as shown in Fig. 25.4.

In an environment of what is labeled above as "politicized information sharing", information is valued similarly to tangible private property by being protected and conserved. On the other hand, in a highly cooperative information sharing environment information is aggressively shared and fully seen as a good that does not diminish by use, neither quantitatively nor qualitatively. This is plausible for two reasons:

1. The special characteristic of information of not being physically scarce;
2. Sharing within a group can increase the welfare of the group by allowing more informed decisions. Indeed, it has been shown earlier that information and ideas are the raw material of innovation.

Hence, it can be argued based on the above discussion on uncertainty that it becomes an important part of leadership to deliberately facilitate optimal information sharing in a group in light of the scale illustrated above. This involves both providing tools for timely access to trusted information and expertise, as well as incentives for sharing as appropriate.

The above considers the provider aspect of sharing information. However, one needs to also consider efficient reception. That is, if one does not habitually go along with the judgment of others, then there is a significant increase in the need to make one's own decisions. This is something one may not be qualified to do

[5]Yet, conflicting purposes through subjective valuation is not the only hindrance to action that facilitates exchanging ideas and information. Action cues are also important. After all, problem solving can carry a high psychic cost. Hence, group procedures aimed at generating better ideas through discussion can end up being dominated by heuristics at the individual level, rather than highly conscious and critical thinking.

fully, has no time to do, or is otherwise very costly. Hence, it often makes sense to depend on the merit of others, especially in areas of high expertise (De Jouvenel 1963, pp. 91–93). This means that the level of trust between people can be considered a form of capital that facilitates the higher level goods of efficient knowledge distribution and the propensity to share.

Yet, the phenomena of the increasing importance of knowledge as capital raises an important issue related to leadership. This concerns the meaning of leadership in a situation where the subordinate is often more knowledgeable about the task at hand than the superior, and the superior may be more in need of the subordinate than the other way around (Drucker 1999). This raises the topic of power in leadership, which is discussed next.

Chapter 26
Power as a Category of Leadership Action

One simply must have the capability to gain action from others in order to have followers in any sense. This means that there can be no leadership without power, and power is an important theme in the leadership theory (Yukl 2010, p. 32). Indeed, power can be considered a category of leadership action. After all, wherever there is a leader that instigates a certain response and this is followed by compliance there is a power dynamic at work, even if it varies in its extensive reach and intensive qualities. Moreover, attempting to induce F to do R through an R-cue necessarily implies the hope that F will respond. Hence, power may be considered a category of leadership action implied within the category of hope and is part of praxeology. Consequently, the discussion below employs the subjective theory of value to consider what power is, especially as it relates to authority and compliance, but also with regard to what it means to knowledge work.

For the purpose of this discussion, leadership power can be defined as the capability to induce the action of other men. Accordingly, total leadership power could be seen as the sum of performed actions that could be gained from each person in a group for a given period of time. More formally, power can be conceptualized as the capability of leader L to effectively induce response R from follower F through communicating an R cue. The total power of L is the sum of all Rs of all kinds that he is capable of inducing. The number of different followers L is capable of inducing to do a particular R, or a set of them, is his extent of power. The intensity of L's power would be in the type of R he is capable of inducing ranging from small favors to self-destruction of the Jim Jones[1] kind. Accordingly, the concentration of

[1]Jim Jones founded a religious group called the People's Temple. In 1978 the group committed mass-suicide by consuming cyanide. Babies were fed cyanide by syringe, while older children and adults consumed it mixed with Kool-Aid. Those who tried to escape were shot. Over 900 people died within a few hours (Barker 1986).

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power in a given group would be the ratio of effectively induced Rs to all available action for a given period of time.[2]

26.1 The Subjective Theory of Value and Power

As mentioned above, a leader L having social power over F means that L induced F to perform a response R through an R-cue. However, the subjective theory of value implies that F chooses action R only because he prefers it. Accordingly, ***the reality of L's power is in triggering F's imagination regarding the value of R to F for F's purposes***. Thus, it is F's imagination that becomes the force that urges F to act, while L activated it. In other words, the force of action is not actually in L, but in F. As was emphasized by Mises (2007, p. 180), even suicide or self-sacrifice are choices made by the person and in this sense preferred over their alternatives. In other words, human action is never completely predictable since imagination and sensemaking are unpredictable, and intervene between stimulus and response. That is why a human subject being moved is actually "an activity of that subject" (De Jouvenel 1963, p. 77).

A main implication of the subjective theory of value with regards to power then is that compliance is always volitional in some sense. This is in contrast to authors like Kellerman (2012, Chapter Introduction) who considers power to be "A's capacity to get B to do whatever A wants, whatever B's preference." Another contrasting view is that of Weber (1978, p. 53) who defines power as "the probability that one actor within a social relationship will be in a position to carry out his own will despite resistance" and Dahl (1957) who considered power to mean that "A has power over B to the extent that he can get B to do something B would not otherwise do."

In sum, the subjective theory of value emphasizes that a leader's force is not in him, but in the imagination of the individuals that respond to him. The corollary of this dependence is that if follower F refuses to respond he destroys the power of leader L. Indeed, Tolstoy (2010, p. 649) argued in "War and Peace" that "… in order that the will of Napoleon and Alexander (on whom the event seemed to depend) should be carried out … [i]t was necessary that millions of men in whose hands lay the real power—the soldiers who fired, or transported provisions and guns—should consent to carry out the will of these weak individuals …." Similarly, Hume (1987) proposed that "as Force is always on the side of the governed, the governors have nothing to support them but opinion". Hence, any authority is fundamentally founded upon opinion with regards to the institution in

[2]This conceptualization of the concentration of leadership power is close to the conceptualization of De Jouvenel (1949) for government power, namely that "the more completely Power can control the actions of the members of society and turn their resources to its uses, the greater is Power's extent". Similarly, Weber (1978, p. 212) defined "domination" as "the probability that certain specific commands (or all commands) will be obeyed by a given group of persons."

terms of the perceived advantage of its existence and its legitimacy. These are then aided by the secondary considerations of individual self-interest, fear and affection (Hume 1987).

A consequence of this for leadership theory is that a focus on "great men" is too simple; without F's propensity to respond to L's R-cues there is no "hero" leader. Rather, many of the prominent figures of history whom are said to make history were in reality dependent on the decisions of those who followed. Thus, for true understanding it is necessary to study the situationally dependent propensities to respond among followers (De Jouvenel 1963, p. 83). These can be understood through the subjective theory of value with regard to follower response shown earlier.

26.2 The Subjective Value of Authority

To proceed further with the subjective theory of value for the concept of power, one may say that the probability of F responding positively to L's request for R can be seen as a function of F's evaluation of two factors. These are the value of action R purely by itself and the value of obedience to requestor L by itself, as illustrated in the Fig. 26.1 (De Jouvenel 1963, p. 109).

The propensity of F to comply with L based on F's subjective valuation of obeying L represents the authority that L has over F.[3] Accordingly, the degree of L's authority may vary between very low and very high as follows:

1. Low or no authority would be when L being behind the R cue has little or no effect on F's preference for R;
2. High would be when F prefers R purely because of it being requested by L.

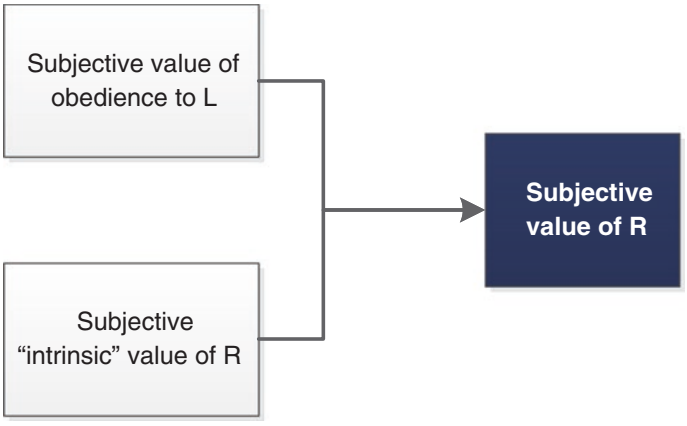

Fig. 26.1 Subjective value of R in light of both its intrinsic value and the value of obeying L. *Source* Tonsberg (2015)

Table 26.1 Ten categories of power

Organizational power	Personal power
Role	Knowledge (expertise/know-how of L)
Resource control	Expressiveness (eloquence of L)
Information	Attraction (degree to which L liked)
Network of connections and their power	Character (e.g., perceived honesty or courage of L)
Reputation	History (familiarity/length of relation L has with F)

Source Bacon (2012, pp. 3–5)

On the other hand, the value perceived by F in obeying L (i.e., L's authority) may be because:

1. F values obeying L as a final cause (satisfying in itself);
2. obeying L is a means to something else, or;
3. a combination of these two.

If L is to be considered a final cause of compliance, then this may be because of his personal characteristics or his social role and status, or a combination of the two. If obeying L is a means, then there are of course many possibilities. E.g., Bacon (2012, pp. 3–5) categorized power into five aspects that are organizational and five aspects that are personal (Table 26.1).

With regard to the relationship between organizational and personal types of power, De Jouvenel (1963, p. 89) holds similarly that authority can be gained either by occupying established social roles or through personal characteristics. However, he also holds that these two forms of authority have a multiplier effect on each other (De Jouvenel 1963, p. 102). In other words, these two subjective meanings are additive.[4]

However, based on the subjective theory of value such effects between meanings of beliefs and desires are far from automatic. In the case of the additive power of personal charisma and formal authority it should be kept in mind that *it exists only in the sensemaking of followers*. Accordingly, it is, e.g., conceivable that Leader L has power based on F's sympathy for him, but loses that sympathy when he acquires a position of authority. From the viewpoint of Praxeology then, power sources of a leader are not necessarily additive, and may even be contradicting. This means again that compliance with authority under change cannot be precisely predicted and will involve speculation. For this reason, the follower habit of obedience is important to improve predictability, and will be discussed next.

[4]This idea of additive meanings is similar to Tarde's proposal that desire and belief are the fundamental social qualities of any human action, whether an imitation or an innovation (Tarde 2011, Chap. V). These beliefs and desires are seen as either affirming or negating in a partial or complete manner and in differing degrees. Hence Tarde proposes various possibilities, such as: dogma + perceived proof = stronger dogma; belief + confirming belief = stronger belief; avarice + vanity = stronger vanity and avarice; love + passion for rhyming = more intense love and rhyming; desire + desire = stronger desire; belief + desire = stronger belief and desire (Tarde 2011, Chap. I).

26.3 Power and Habit

Besides the relationship between personal characteristics and formal roles, another important aspect of the power of authority is habit. This aspect can be seen by categorizing the possible responses to any R cue as:

- Habitual rejection by F with little or no consideration;
- Losing an argument with F for R;
- Winning an argument with F for R;
- Habitual acceptance.

Thus, one could conceive of the fourth of these as "habitual yes authority." In this case, the preference for R has already been established and F is not evaluating it in terms of alternatives. On the other hand, a "yes" or "no" response to R based on argument represents an evaluation of R itself and that of obeying L. Finally, a habitual "no" to the R cue represents a cue based rejection of R in light of the preferred alternative. Changing a habitual "no" requires first getting F's attention, then his decision to evaluate R as an alternative. Given F's decision to evaluate R, the evaluation will either be an argument based "yes" or "no" according to the perceived subjective value of R. This value will be a function of R's perceived value to F and the value of obeying L, as discussed above.

With regard to habitual response, an important leadership power resource becomes the ability to get attention for habitual responses or decision making. This importance can be illustrated as shown in (Fig. 26.2).

The value of obtaining habitual "yes" compliance explains why various organizations offer contractual employment. It is equivalent to buying this type of followership which would otherwise be difficult to establish or maintain. This is especially the case when R by itself has no significant value to F. Once an employment contract is established it also alleviates F from the burden of evaluating every request that L makes; F can rely on his earlier decision to become an employee and thereafter comply habitually. He does not re-evaluate unless cued to do so, e.g., by strongly disliked requests, disliked leaders, or attractive alternatives to the current employment.

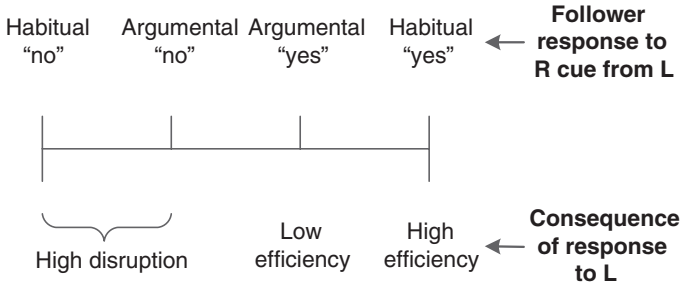

Fig. 26.2 Habitual and argument based follower response. *Source* Tonsberg (2015)

This again means that an important part of organizational leadership is simply to avoid behaving in a way that has a negative effect on habitual compliance. After all, it was shown earlier that the subjective theory of value dictates that a leader has two main concerns with regards to achieving follower response R. The first is to communicate R to the follower directly or indirectly. The second is to facilitate motivation toward the goal in terms of its perceived value, or the value of the process of working toward it, or what it further leads to. Habitual response means that the second step is not always necessary. Thus, habitual compliance can be considered a form of leadership capital.

26.4 How Power Is Generated and Consumed

All factors that facilitate habitual compliance can be considered to be a form of leadership capital because they are a higher good. An obvious example is money to pay salaries. Other examples are conventional causes of loyalty or compliance, such as exchanges of favors or being in a position of authority.

Since leadership action is an interaction in order to achieve action through others toward a particular purpose, the capital of leadership action is the propensity of followers to comply in the future. This propensity can be considered consumed or lost if it decreases, and saved or gained if it increases. Of course, there is no way to measure such phenomena objectively. Rather, like the subjective theory of value, it is a tool for understanding action, in this case leadership action.

That being said, it should be noted that this compliance or leadership capital differs from conventional physical capital in that it is primarily a mental phenomenon. As such, the conventional rules of scarce goods do not apply. Most notably, it is not necessary that compliance from follower F today or in the short run means a reduction of available compliance at a later stage. It is even conceivable that it increases. After all, repeated compliance may contribute to a more ingrained habit of compliance, especially if none of the instances end up seen by F as having adverse effects.

It should also be noted that there is no necessary conflict between compliance to the leader and innovative entrepreneurship. Rather, such entrepreneurship can occur within the framework of an assigned task, and does not necessarily imply being a maverick. In fact, it may even be part of the task to question the orders given, such as when one is told to voice one's opinion within certain guidelines for some greater good. Defiance that falls within such guidelines can be considered a form of compliance.

That being said, the question of building power as conceptualized here, becomes a question of building follower propensity to comply. According to the subjective theory of value, this propensity is a function of how the leader's suggestions comply with follower values and speculations. *Ceteris paribus*, the more compliance with a leader is seen as a preferred means to removing felt uneasiness, the more power of authority the leader will have. Hence, building power is to

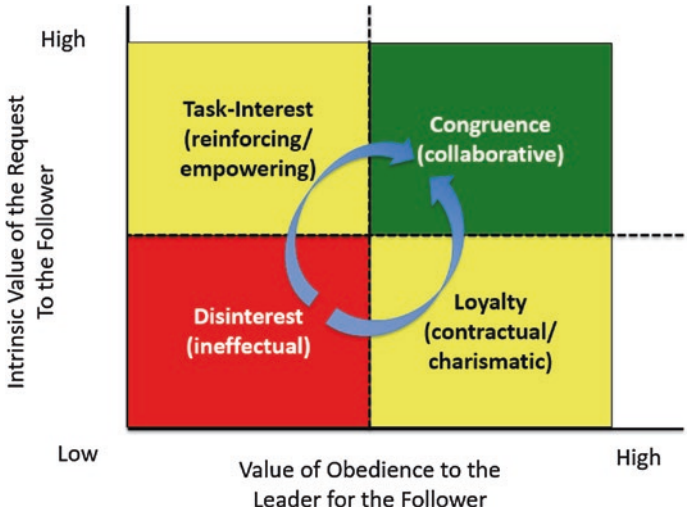

Fig. 26.3 Leadership power-compliance matrix. *Source* Henderson (2016)

influence the perceived future value of compliance. Moreover, based on the notion that action varies on a continuum between being based on argument versus being based on habit, there are mainly two ways to build power. It is either by communicating an argument, including the nonverbal such as the provision of incentives or more subtle cues, or by establishing habit.

As for building compliance through argument, this involves influencing follower motivational factors in terms of beliefs and values. Hence, to understand how power is generated one needs to understand motivation, because conscious action only occurs if it is valued over perceived alternatives. This value is mainly a matter of perceived needs and beliefs, including expectations, as can be seen from modern motivation theories.[5]

On the other hand, building habitual compliance is a matter of establishing and maintaining the perception that compliance is to the follower's best interest in terms of gaining benefits and avoiding disadvantages. This may initially involve arguments until an R-cue becomes a cue for habitual compliance based on past valued consequences. Maintaining would be largely a matter of keeping cues, responses and consequences similar to those in the past.

The Fig. 26.3 is an example of a descriptive and prescriptive tool that can be developed for a specific domain, such as leadership, once the underlying concepts of Praxeology are well understood. Descriptively the tool can be used to

[5]These include, but are not limited to Drive Reduction Theory, Maslow's hierarchy of needs, Alderfer's ERG Theory, McClelland's needs for achievement and power, Herzberg's Motivation-Hygiene Theory, Job Characteristics Theory (JCT), Self-Determination Theory, Expectancy Theory, Control Theory, Equity Theory, Goal Setting Theory, and 16 Basic Desires Theory.

plot the position of the follower with regards to compliance to the request of the leader. Prescriptively the tool provides a roadmap for the leader to develop strategies to move the follower to a more compliant position. Ideally, the leader could develop strategies that would move the follower to the 4th quadrant of Congruence whereby mutual strategies are being employed. Otherwise said, when a follower is positioned in the 4th quadrant they are fully congruent in task-interest and loyalty.

Another useful model for understanding follower behavior in terms of the effect of power on habit may be Kurt Lewin's field theory. This construct is strikingly similar to the static method employed by Mises in economics as was discussed earlier. It models a static situation to which different assumptions can be introduced to understand change at an individual level. Field theory holds that behavior (B) is a function of the person (P) and his environment (E). Hence, $B = \int (P, E)$ represents the dynamic field of psychological forces that is referred to as a person's "life space" (Lewin 2010c). Moreover, behavior change comes from the net effect of all conscious and unconscious forces at work at a point in time (Lewin 2010a). These forces may be from one's own needs, or a person in power, or more or less impersonal and are of two kinds:

1. Driving forces, namely repulsion in the form of "negative valence" or attraction in the form of "positive valence." The valence of an activity is according to the strength of the need it satisfies;
2. Restraining forces, such as social and physical barriers (Lewin 2010a).

Lewin (2010d) proposed that psychological forces could be represented geometrically in a "hodological space" that represents the person and his environment, the Situation (S), at a particular point in time (S^t) where all of these forces are according to the perception of the person in question. Hence, in force field theory social power becomes the "possibility of inducing forces" on another person through that person's perception[6] (Lewin 2010b).

Accordingly, a change in habit is explained as a change in the perceived forces large enough to "unfreeze" the current equilibrium. An example would be a loss of trust among followers toward leaders, which would disrupt habitual compliance. This induces movement to another mode of behavior, and freezes the new mode at a new equilibrium (Lewin 2010e).

26.5 Power and the Distribution of Knowledge

It was asked earlier what role leadership has when a leader knows much less than his followers in their respective fields. Indeed, it has been suggested that this phenomena signifies the end of leadership (Kellerman 2012). Definitely, the knowledge economy has had at least two major consequences for formal leader–follower relations. They are due to at least two factors:

[6]This inducing would be the role of R-cues.

1. Increased information available regarding the people in leader roles;
2. Increased specialization in a multitude of fields.

From a praxeological perspective these two factors may indeed decrease leadership power by changing subjective value perceptions. First, because a knowledge increase with regard to the leader's personal characteristics or history means that his various personal weaknesses may be exposed. This may reduce the value of being associated with him as a follower. It may also reduce the belief that he will lead his team toward success, i.e., reduce his charisma and personal authority.

Second, because specialization of knowledge entails increased scarcity of suitable followers, which increases their subjective value to the leaders and the cost of losing them. This makes the leader himself more dependent on the follower; he needs to show greater concern for follower satisfaction of felt uneasiness and potential defiance; he needs to be willing to pay a higher price so to speak.

Moreover, a high level of specialization means that the person in a follower role will most likely have more decision making freedom by virtue of being an expert. This means again that based on his expertise he will instigate action from the person in the leadership role. In this way, the person in the follower role is actually taking leadership action *functionally* and the person in authority becomes a follower *functionally* in such an instance. The effect of increased knowledge specialization then is to transfer more leadership action to the follower role. Hence, it is not that leadership disappears with increased information flow and knowledge specialization, but rather that instances of leadership action are in less agreement with apparent hierarchies of authority.

Chapter 27
Meta Leadership

Thus far the discussion on leadership action has mostly focused on instances of simple dyadic leader–follower relationships. This emphasis is a consequence of the methodological individualism of praxeology; group organization is ultimately explained by individual choices as dictated by the subjective theory of value. This is what methodological individualism dictates (von Hayek 2002). Hence, for meso- and meta-level organizations the praxeological proposition is still that people do what they themselves prefer. Not what they "should" prefer, but what they prefer according to their values, what they pay attention to and how they make sense of it.

Accordingly, it follows that organization and order in society is explained by the unification and clustering of individual purpose, while conflict is founded in conflicting purposes.[1] This is even how an economy has a high level of order. Consumers are organized by their purpose to increase their subjective well-being. Many businesses are organized by the desire for monetary profit, or to produce within the boundaries of a minimum of profit. Conflicting purposes are resolved by purchasing power and profit availability by convention.

Indeed, even an authoritarian regime is organized by the leader's purpose meeting that of his followers, because following is a choice, even if one wishes for other options. After all, the threat of violence in case of non-compliance does not always provide a leader with his desired response. However, if there is compliance, then this is because purpose was unified among the followers by the desire

[1]When two men want the same thing at the same time and it is only available to one of them there is a conflict of interest. Different authors may focus more or less on the importance of conflict versus cooperation. E.g. Hobbes (2006) famously had a rather dark view of life in society stating: "… if any two men desire the same thing, which nevertheless they cannot both enjoy, they become enemies; and in the way to their end (which is principally their own conservation, and sometimes their delectation only) endeavour to destroy or subdue one another." Hobbes (2006) thus concluded that the life of man tends to be "solitary, poor, nasty, brutish, and short".

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to avoid adversity, or for other individual aims that match the action demanded. However, such organization ends when the threat of violence is not expected to a sufficient degree, or considered costly enough to outweigh other perceived options (von Hayek 1998, p. 93). In the end then, the structure of the organizations is explained by the structure of individual purposes and how they agree or conflict.

Consequently, from an individualistic standpoint, the phenomena of leadership action in a larger setting with more individuals can be seen ultimately as a web of "leader elicitation for purpose → follower response" or "R-cue → Response" chains. However, orderly patters are supported by habit in terms of routines, values and beliefs along with the regularity of the physical environment. Moreover, since it is rare for many individuals to be coordinated in purpose without a more or less articulate plan, there is a need for leadership to bring orderly patterns. In other words, a group or large organization is not a machine-like mechanism. Rather, it is a dynamic and intertwined system of actions upon actions, "on existing actions or on those which may arise in the present or the future" (Foucault 1983). Its likeness to a mechanism is only as far as the purposeful human action of these human beings are in line with a common purpose.

Accordingly, in a group leadership setting the basic element of leadership action does not change from that used to understand a dyadic relationship of a leader and a follower. However, since the number of followers is higher, the division of labor and thereby its management through planning, feedback and amendments becomes more complex. *Ceteris paribus*, there are more opportunities for failure or losses simply because there are more instances of instigating action. Hence, there is a strong need for leadership actions aimed to maintain a habit of compliance and to ensure sufficient harmony in terms of interpersonal relations as well as shared beliefs, values and purposes (Weber 1947, p. 383). In essence, cooperation and conflict need to be managed relative to the goal a leader actor has in mind.

This means that for the meta-level of leadership action, the main focus will be on patterns of order in terms of conflict and cooperation and explaining these at the finer structural levels down to individual action. As seen earlier, this is the major theme of praxeological economics as well, where in essence the coordination of the market is driven by consumer demand being met by profit-seeking entrepreneurs that allocate capital according to their appraisal of profit opportunities. However, for leadership action different praxeological constructions are needed. One example would be the scale of cooperation presented below as well as a functional explanation for levels of hierarchy. Another example is how to explain inefficiencies of group idea generation activities.

27.1 Cooperation and Hierarchy

Cooperation means that the set of tasks needed to achieve a state of affairs are performed by a number of individuals. As von Mises (1996, p. 195) states, this can be achieved in two main ways, namely, "cooperation by virtue of contract and

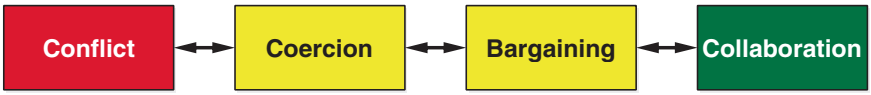

Fig. 27.1 Scale of cooperation. *Source* Tonsberg (2015)

coordination, and cooperation by virtue of command and subordination or hegemony." On the other hand, conflict implies that one or more actions are taken that hamper a task needed in a cooperative set of tasks. Based on this, one can view the level of cooperation at a group level as ranging between conflict, forced cooperation, cooperation based on more or less explicit exchange, and finally, collaboration based on coordinated needs. This can be illustrated as shown in Fig. 27.1.

Moreover, one may additionally consider as neutral actions those that neither hamper nor contribute to a particular state of affairs.

From the perspective of the subjective theory of value, all actions on the above scale could be explained by subjective preference for those actions. Such preferences are further explained by the categories of actions that have already been elaborated on extensively, such as attention or clues, psychic felt uneasiness, hope, speculation, ends sought, etc. In this way, Praxeology provides a powerful framework for understanding social systems.

In an organization one may encounter all the types of actions that the scale of cooperation includes. In some cases, individuals may simply have highly compatible purposes and means to achieve them. In such cases the need for a coordination function may be minimal. However, there is usually the possibility of conflicting means and ends between individuals or groups. In such cases, there is a need for a function with the authority to settle such conflicts, as well as one to choose how or by whom such authority will be executed (De Jouvenel 1963, p. 115–123). Similarly, there is a need for a function to select actions that are to be pursued at the group level and remove conflicts through coercion, bargaining or other forms of persuasion according to people's scales of preferences. While these above mentioned *functions* are needed in an organizational setting, it is not strictly necessary that they are always fixed roles of specific *individuals*.

However, the need for these functions does provide a praxeological explanation for the need for hierarchy. As for the levels of a hierarchy and the number of individuals for each level, one may invoke the categories of action to explain these as well. *Time* and the scarcity of *attention* means that a person in authority must choose between *feedback* signals for control purposes. Hence, if there is a high level of *uncertainty* regarding follower compliance and decision making, the number of people that can be observed will be limited. On the other hand, followers that are trusted to be compliant and make good decisions may need only a very low ratio of supervisors. Hence, one may argue that, *ceteris paribus*, the higher the uncertainty with regard to follower compliance and good judgment the higher the need for supervisory attention and hierarchy. This phenomenon can again explain levels of hierarchy because if all a superior can handle is for example 5

subordinates, then a higher level superior can only handle being accountable for 5 teams with 5 leaders. Hence, under the assumption of a maximum load of 5 subordinates, a 3 level hierarchy will have a maximum size of 31 individuals. A higher level superior would be able to handle 5 such sets of 31 individuals, which means that his organization has a maximum size of 5 * 31 = 155 individuals, and so on.

Once an organization has reached more than two levels of hierarchy leader actions or R-cues issued at the top will need to be divided into subtasks and cascaded to lower levels and performed by the appropriate individuals at the appropriate level. This is essentially a distribution and subdivision of the entrepreneurial function of allocating resources. How this is done depends on the situation, and has a large component of speculation as to what will serve the purpose at hand in the best way.

As mentioned previously, the Praxeology of leadership as elaborated thus far is not meant to cover all details and possible scenarios. Rather, the purpose has been to show how the Praxeological framework provides a systematic and helpful method for gaining an understanding of situations involving human action. This has been demonstrated by showing how going through the Praxeological method of elaborating on the categories of action raises a number of important issues, and provides a tool for understanding them through the subjective theory of value. In the following section some of the major findings of our discussion will be synthesized.

Part V
Synthesis

Throughout the presented discourse, an examination of the theory of Praxeology of Mises has been undertaken to suggest how it may be applied to the study of leadership. Hence, the first task was to establish its viability as a meta-theory for the study of human action in the social sciences in general. Accordingly, an effort has been made to remove the stigma of dogmatic or hard apriorism by explaining the praxeological position towards a priori statements, as well as its dualism and approach towards empirical data. Further, the praxeological approach of Mises was analyzed in terms of its a priori categories and practical procedures as applied to his economics.

Through this effort of validating praxeology for the study of leadership, some amendments to the original framework have been suggested. These include:

1. The proposed action cue category to better account for habitual action;
2. Encouraging greater use of empirical data and establishing its prerequisites;
3. Developing the framework for a more detailed a priori description of evolution and entrepreneurship.

These are believed to be novel contributions to the meta-theory of Praxeology along with the application to leadership study.

In the below the main points are summarized and some of their implications discussed.

Chapter 28
The Principles of Praxeology and Its Role as a Method of Social Science

Praxeology ventures to explain social orders that are "the result of human action, but not the execution of any human design"[1] (Ferguson 1782, p. 205). It seeks to understand these spontaneous orders[2] through the lens of individual[3] choice under uncertainty as the generative components of rules, roles, institutions and other structures; a methodological individualism. Accordingly, it recognizes the diversity and heterogeneity of choosing actors that through interaction, influence or other processes generate collective systems and outcomes that these actors did not intend[4] (Felin et al. 2011). This stands in contrast to "collectivist theories of society which pretend to be able directly to comprehend social wholes like society, etc., as entities… which exist independently of the individuals which compose them" (von Hayek 1946).

In this effort, Praxeology is proposed by Mises to be an aprioristic science like mathematics. As such, its contribution to knowledge lies in elucidating what is implied or not in a priori "categories, concepts, and premises" and thus "to render manifest and obvious what was hidden and unknown before" (von Mises 1996, p. 38). The rationale for employing such an approach is that human action phenomena are unlike those of natural science. First, social facts have no quantitatively constant regularities. The reason is that they are generative phenomena of human acts of volition that are subjective and individual, and emerge in a sea of

[1]Similarly, Popper (1959) sees the task of the social sciences to be to "trace the unintended social repercussions of intentional human actions".

[2]von Hayek (1946) states that spontaneous order is "the order which we find in human affairs as the unforeseen result of individual actions" and "which are greater than their individual minds can ever fully comprehend".

[3]In other words, it focuses on the phenomena of choice as explanatory or generative components of structure and is not satisfied with high level macro theorizing alone.

[4]This approach contrasts approaches that study the state of society in the holistic manner of methodological collectivism such as Marxist methodology (Popper 1944b).

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complex, unobservable and immeasurable variables. Second, the praxeologist as a human being is in a unique position by being both a subject and an object of his science (Knight 1925). Hence, while he can neither predict choice nor its higher level social facts with purely objective empirical methods, he can still engage in introspection to know something about action.

Accordingly, through such contemplation it becomes apparent that whatever one chooses is what seems to be most valuable at the time on a subjective ordinal scale of apparent alternatives; whence the subjective theory of value. Moreover, any chosen action can be seen as a means chosen now to achieve a valued end or goal image later in time according to expectations. This again implies that the actor has hope and speculates based on regularities perceived in the environment that psychic felt uneasiness will be reduced.

This form of dissatisfaction-preference-means-end reasoning is taken by Praxeology to be hard wired in every human being, because when one inquires about the actions of others, one asks, "why did he or she do that?" In other words, what end was this action a means for? (O'Sullivan 1987, p. 60). Hence, anyone with needs, along with the faculties of reason and senses, and the ability to change his situation, will have a means-end paradigm. One cannot as a human being think of it any other way. In this sense, the paradigm of dissatisfaction-preference-means-end is something human beings have a priori, and is part of the human mind (von Mises 1996, p. 57). In fact, we would not know even where to begin to look at action without such an a priori to tell us what to look for (Popper 2009). Hence, the end sought by action is understandable as are its means, even if they are not predictable by quantitative constants. Accordingly, ends or goals become a de facto final cause for the study of action.

In this way, the first step of Praxeology as a method is to elucidate what is implied by the concept of purposeful action as was shown in the discussion on the theory of human action and its categories. The main categories mentioned by von Mises (1996, pp. 92–118) and discussed earlier are illustrated in Fig. 28.1 in terms of how they are derived.

Further to these action axioms, it has also has been pointed out that the subjective theory of value does not imply careful speculation and valuation as a necessary part of every incident of action. Rather, it is sufficient for analytical purposes that the action is perceived as normally a matter of choice. The counter example would be a knee jerk reflex, and not merely acquired habits. Hence, it was argued that Praxeology as a framework is suitable for a wide spectrum of action, ranging from highly automated behavior, like driving a car, to decisions that normally involve careful pondering, such as buying a new home. To support this spectrum more explicitly and recognize the automated elements of action more formally in theory making, not the least being the phenomena of attention, it is proposed that Praxeology should explicitly recognize the category of the action cue. Accordingly, the framework of categories of human action can be illustrated as shown in Fig. 28.2.

However, knowledge of action does not end with these implied categories. Rather, one knows a great deal from experience about what most human beings

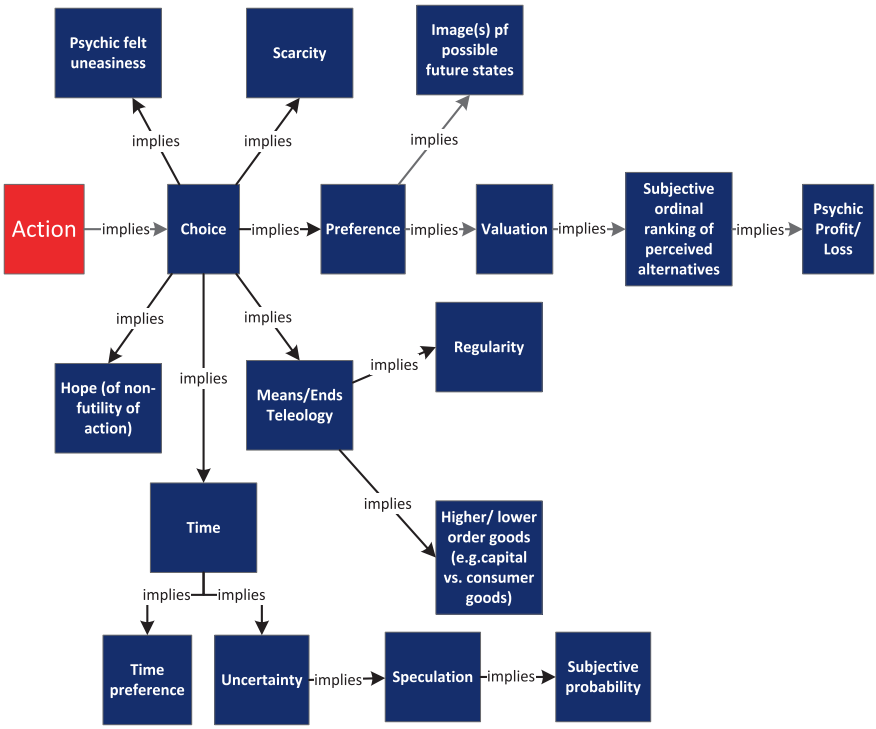

Fig. 28.1 The categories of action elucidated by Mises. *Source* Tonsberg (2015)

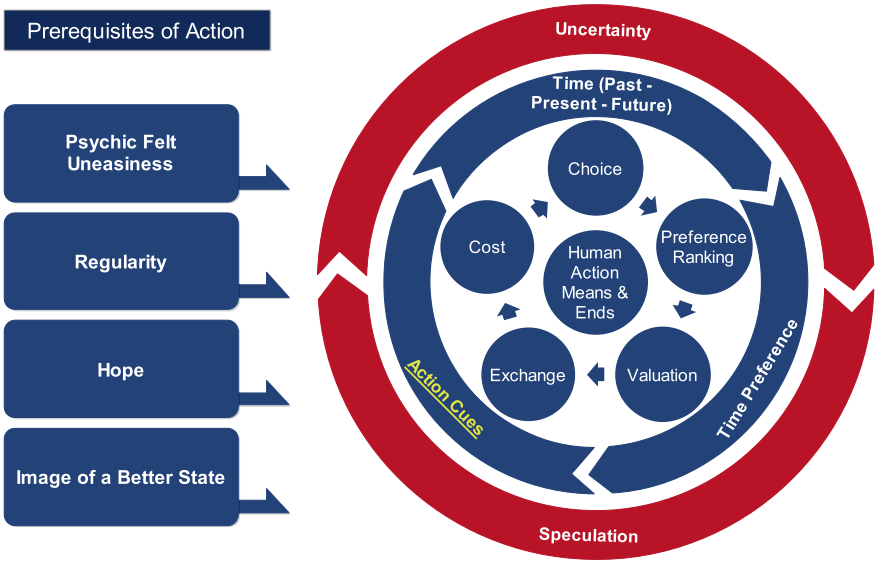

Fig. 28.2 The framework of human action categories. *Source* Tonsberg (2015)

seek at a general level, such as leisure, life and health, and that they engage in cooperation, such as trade and other contractual relations as a means to reduce dissatisfaction (von Mises 2007, pp. 269–270). Hence, one can use the knowledge of the implications of purposeful action and some of these known empirical elements to say something about regularities in social phenomena (von Hayek 1957, p. 126). The value of the resulting theorem will hinge on: (1) the quality of reasoning and, (2) the fit of the assumptions made to the situation described.

In other words, the a priori knowledge of action and the subjective theory of value along with suitable assumptions enable one to build speculative models of what to expect from a given social framework under change (von Mises 1990c, p. 10). As such, Praxeology is a deductive system that "draws its strength from the starting point of its deductions, from the category of action" (von Mises 1996, p. 68). It provides a method of systems thinking that aims to synthesize patterns, principles, or algebraic formulas based on individual action to understand unplanned emergent order (von Hayek 1957, 1994; von Mises 1996, p. 69). That is, one can employ Praxeology as a method to predict patterns and speculate how different interventions in a social order will turn out by way of elucidating the entrepreneurship function through the static method. An example pattern prediction from Misesian economics is that an *increase* in minimum wage, would *ceteris paribus* lead to an *oversupply* of labor (von Mises 1996, p. 114). In this way, Praxeology aims by deduction from the categories of action and a set of subsidiary assumptions to transform "an uncontrollable and unintelligible world into an organization which we can understand" and thereby master and predict to a greater degree (Schuetz 1943).

Finally, praxeology does not entail a hard and dogmatic scientific apriorism or methodological dualism. Rather, it reflects the currently possible state of knowledge in light of the fact that there are no known constants that predict action or social facts. It is just that the axioms of Praxeology can be more than that of other sciences by virtue of being a study of human action by human actors, hence, more can be taken for granted than in studying atoms or animals. Moreover, although these axioms entail an aprioristic procedure, there is nothing that prevents empirical research in Praxeology. After all, Mises himself used empirical propositions in his theories and models. Rather, it has been argued that such research ought to be encouraged as longs as the categories of action are included in theory construction and that the lack of quantitative regularity of human action is kept in mind.

Chapter 29
Evolution and Change in Action

In addition to the treatment of the epistemology of praxeology, its methodological procedure was elucidated along with theorem building examples from the economics of Mises. The procedural steps of Praxeology were identified as

- elucidating the a priori categories of human action;
- isolating the area of action to be studied, such as action involving monetary exchange, or as in our specific follow-up interest, action involving leadership;
- elucidating the categories of action for the isolated area;
- making appropriate empirical or hypothetical assumptions to deductively develop theorems of action for the situation in question;
- analyzing the nature of change in the modeled situation to elucidate the role of human action, particularly from the viewpoint of uncertainty, i.e., the role of the entrepreneur.

The uniqueness of this process as an approach to social science is in its explicit recognition of a priori aspects of human volitional action. Its universal set of axiomatic categories provides a rich set of meta-propositions that can deliver substantial analytical power and a well-defined starting point to a great variety of settings that involve human action as a key parameter. This includes, as postulated, the study of leadership.

However, it has been further proposed that there is a need for expanding the fundamental praxeological a priori framework to better account for the phenomena of entrepreneurship, or human action under uncertainty, and the related factors of imitation and innovation. This has been done by elucidating these variables in terms of the a priori of action, the a priori of discovery, and by linking these with the basic elements of evolutionary theory, namely, variation, selection, and replication. This is illustrated in Fig. 29.1.

With the elaboration of the function of entrepreneurship to include the a priori elements of change from evolution theory, the praxeological framework has

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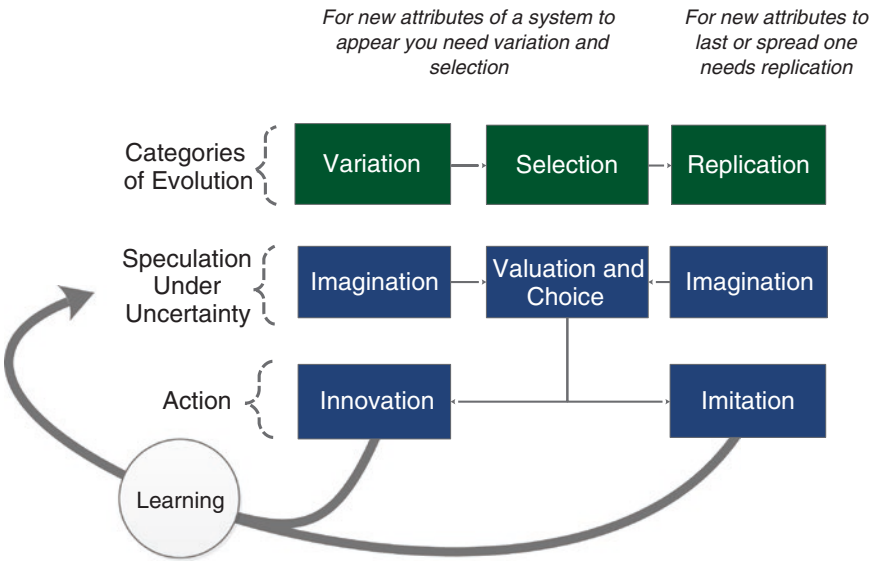

Fig. 29.1 The praxeological evolutionary conception of entrepreneurship. *Source* Tonsberg (2015). *Note* This figure is being repeated for illustrative purposes

become a richer theory for the study of change in action and society. Moreover, by adding the a priori action category of the cue, it is more prepared to study the role of habits and routine in both change and rigidity, or innovation and imitation.

With regard to the suitability of the praxeological framework for the study of behavior change it is of interest to see how it compares to the commonly used models of behavior change. For this purpose one may consider that according to Fishbein et al. (1995) a consensus among major theorists and researchers was reached on eight variables that appear to account for most of the variation in any given behavior as follows:

- **Intention**; a strong commitment to perform the behavior;
- **Environmental Constraints** that would make the behavior impossible;
- **Skills** to perform the behavior;
- **Outcome Expectancy** or **Positive Attitude** from the belief that the benefits of the behavior outweigh the disadvantages;
- **Norms**, i.e., there is more normative pressure to perform the behavior than not;
- **Self-standards**, i.e., consistency with self-image;
- **Emotional Reactions** to performing the behavior is more positive than negative;
- **Self-efficacy**: the person perceives that he or she has the capabilities to perform the behavior under a number of different circumstances (Fishbein et al. 1995).

In addition, in reviewing the behavioral models in use Montano and Kasprzyk (2008) mention two components other than the above 8 that affect behavior directly:

- **Salience** of the behavior in terms of how-to information specifying the behavior required (prompts), as well as cues and reminders that trigger behavior;
- **Automaticity**, since a habitual behavior makes salient intention less important in determining behavioral performance (Aarts et al. 1998).

These 10 factors mentioned above are compared to the a priori categories of action in Table 29.1. The purpose is to illustrate that the praxeological framework is broad enough to capture these parameters:

Table 29.1 Praxeological approach to 10 behavior change variables

Behavior change variable	Praxeological approach to these variables
1. Intention	Behavior is selected and intended based on *subjective value* and *felt uneasiness*. However, whether intention leads to action can only be established empirically
2. Environmental constraints	Perceived constraints influence *hope* and *speculation* in terms of the probable benefits and costs. However, the direction and strength of the influence of a particular constraint can only be established empirically. For example, a constraint can be valued as a positive challenge, like climbing a mountain, or as a pure cost and inconvenience. It depends on the subjective view of the actor; the meaning he attaches to the constraint
3. Skills	Skill is a factor that affects hope and speculation in terms of the probable benefits and costs. However, the direction and strength of the influence of a particular skill can only be established empirically. For example, a skill can be valued as a positive source of ease or as a cost due to lack of challenge. It depends on the subjective view of the actor; the meaning he attaches to the skill
4. Outcome expectancy/positive attitude	The content and likelihood of the benefits and cost and their associated expectations of likelihood are subjective as are the values and psychic felt uneasiness associated with all of the factors. The content is largely influenced by cues in terms of what is paid attention to and thus included in decision making
5. Norms 6. Self-standards	Norms and self-standards will influence outcome expectancy to the degree that compliance with them is valued by the actor and causes psychic felt uneasiness
7. Emotional reaction	The psychic felt uneasiness with the behavior itself could be positive or negative and influence the attitude toward it and thereby its subjective value
8. Self-efficacy	The confidence in one's own ability affects hope and speculation. However, just as with skills, how it affects the subjective value of action is not a priori
9. Salience	Goal image is an a priori, but how its clarity or other psychological qualities affect action is an empirical question
10. Automaticity	Action is recognized a priori as more or less cue based. However, influence of various types of cues, their degree of automaticity, and how this affects action is an empirical question

Source Tonsberg (2015)

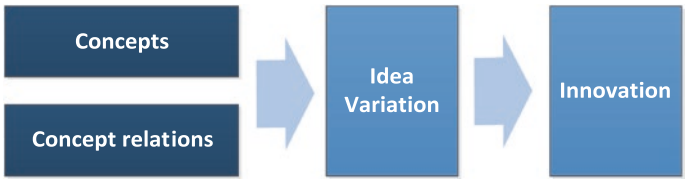

Fig. 29.2 Concepts and relations as a source of innovation. *Source* Tonsberg (2015)

The significance of the above table is that it provides a unique view where Praxeology can provide a meta-theory that is rich enough to include the variables that are commonly regarded as parameters of behavior change. The table also hints to how the categories of action can be used to develop hypotheses or assumptions based on these parameters, but also to think of other possible variables.

It is further noteworthy that with the evolutionary a priori framework proposed and added earlier one also gains the perspective that the behavior change parameters above are focused on imitation, or how a particular behavior is adopted. However, these a priori concepts also make the praxeological framework rich enough to aid the study of innovation through an evolutionary model of entrepreneurship, or change agency. More specifically, the a priori of imagination as the source of variation of ideas that ultimately lead to innovation in action has been further enriched in the work at hand by the notion that novel ideas come from novel concepts or novel relations between them (Fig. 29.2).

According to the above then, it may be noted that before an attempt was made to elaborate on a praxeology of leadership, the praxeological framework had been defended epistemologically, elaborated in terms of its content and application, and modified to be systematically more open toward empirical data. However, it has also been expanded to include several new a priori categories of action to develop the role of entrepreneurship. As such, it presents a unique evolutionary praxeology that explains selection through individual action based on the subjective theory of value. Moreover, it connects social evolution to purposeful human action and volition rather than to biological or more mechanistic paradigms.

Chapter 30
Leadership

The field of leadership study has been used in this book to make a case in point for the richness and power of the praxeological framework. This was done by analyzing leadership through the praxeological method. First, a praxeological conception of leadership was developed based on the functional types of the leader and follower, and leadership action was defined as action to achieve action from others. Second, leadership action was conceptualized in terms of the categories of action through methodological individualism. That is, assuming that all the patterns of the meta-structure can be explained at the finer structural levels rooted in individual action (von Hayek 2002).

Through the analysis it was pointed out that the decision to comply with a leader can be understood through the subjective theory of value as follows: a follower will respond to a leader's request, or response cue, when this is judged by the follower as the most valuable action. That is, when judged relative to perceived alternatives for the time of action. It was made clear from this that the Response cue (R-cue) is a category of leadership action, and that attention and perceived value are of essence to the follower's decision to act. This decision to act based on the R-cue can be placed in the evolutionary framework presented earlier as shown in Fig. 30.1.

From Fig. 30.1, it is seen that the response of the follower is either going to be an innovation or an imitation. However, such innovation or imitation may or may not be compliant with the response the leader desires. Rather, the compliance of the act depends on what is preferred in terms of its subjective value at the time of action. As has been elucidated in our discussion, this valuation depends again on various cues, focus of attention, more or less conscious speculations in terms of means and likely ends, etc.

It was further noted in our work that the subjective theory of value implies that a leader is followed only to the extent his response cues lead to a follower action that complies with the leader's wishes. This again implies that a leader has power

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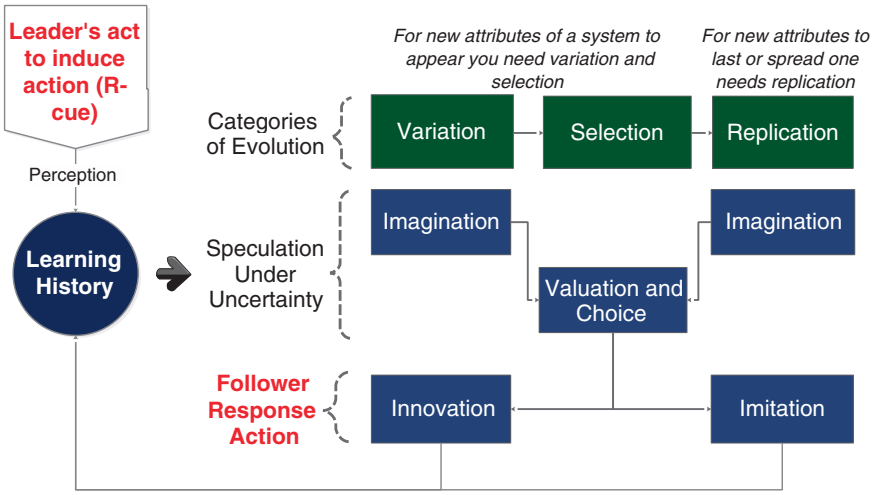

Fig. 30.1 The praxeological evolutionary conception of leader action and follower response. *Source* Tonsberg (2015)

only to the extent that followers' subjective valuations lead to compliant action. Hence, to exercise power involves acting to guide "the possibility of conduct and putting in order the possible outcome" for other actors and is not a particular centralized structure or institution (Foucault 1983). However, a leader's ability to manipulate the possibilities that potential followers perceive and how they evaluate them depends a great deal on the situation. Based on a similar observation, Tolstoy (2010, pp. 648–649) stated: "A Tsar is history's slave." However, this does not necessarily diminish the importance of leaders or great men. Rather, the praxeological perspective on power presented earlier provides an understanding of why and when leaders are more or less important.

Importantly, Praxeology stresses that the relationship between a leader and a follower is one of two entrepreneurs acting under uncertainty to reduce felt uneasiness. As such, both speculate in terms of expectations and valuation of means and ends and this process is affected by attention to the variables of choice, which is again affected by perceptions and how these are made sense of. The leader of the two is simply the one that at a particular instant attempts to reduce felt uneasiness through the means of communicative interaction in order to achieve action through the other toward a particular purpose. Hence, the role as leader and follower could switch at a moment's notice. Moreover, the actions that are taken reflect the evolutionary framework of entrepreneurship presented earlier. These factors are illustrated in Fig. 30.2.

The above praxeological framework is capable of integrating commonly considered categories of existing leadership theories: those based on traits, behavior, and situation. For example, at the dyadic individualistic level, if the valued end is assumed to be performance, then a praxeologist would first theorize about how

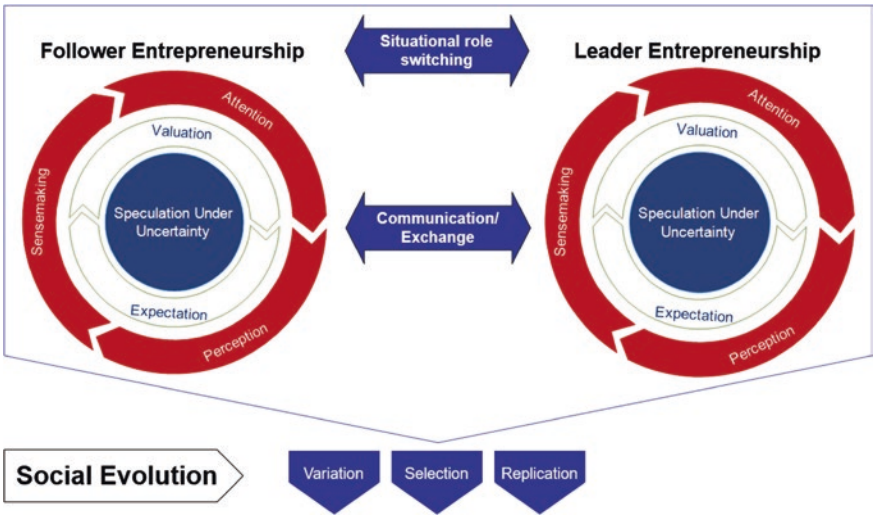

Fig. 30.2 Leadership as evolutionary exchange between entrepreneurs. *Source* Tonsberg (2015)

the causal drivers of these theories affect the subjective valuations and speculations of the follower. That is, how these aspects cue the followers' preferred ends and means and thereby their action. Further, the praxeologist would need to consider all the categories of action implied in entrepreneurship, such as final ends in terms of personal values and related psychic felt uneasiness; the choice of means is tied to the a priori of regularity, namely, the follower's belief about how the world works; relevant action cues that affect attention and subjective valuation; time preference and uncertainty; etc. In short, the praxeologist has an a priori framework to help him understand the variables of many existing theories. In fact, even information processing theories related to praxeology's categories of regularity and cues may be included. For example, implicit theories are after all theories about how the world is or how it works.

It is interesting to note that Praxeology provides a leadership framework that can also be considered congruent with the latest scholarship on leadership, i.e.,: The Leader–Follower paradigm. Research has shown that in high stress environments of knowledge work that the role of the leader and that of the follower switches between participants based on their skill set. This means that an individual within a group setting can be both the leader and follower at different times and that the leadership and followership roles can rotate across members of a group. York (2012, p. 369) states that

> Based on the responses given by the EMS leaders, one can infer that there exists a natural dynamic between leaders and followers that is based on a respect for professionalism. In turn, this respect allows leaders to rotate between following and leading in the presence of other professionals, throughout the entire leadership process.

The above reinforces the notion that leadership is a role that one assumes for a given moment and not a position that one holds over time or that is anointed. Praxeology, in like fashion, considers each leadership exchange as independent of the next. Leadership as a transaction occurs in a stochastic fashion and the actor may for one exchange hold the leadership role while during the very next exchange hold the follower role with the roles continuously switching into the future. The above underscores the limitation of labels and the difficulty inherent in the placing the labels of Leader or Follower on actors.

The above mostly concerns the dyadic level of analysis of action for the factors of follower compliance and productivity. On the other hand, in analyzing performance at the meso- and meta-levels, it could be argued that two factors grow in relative importance. The first is achieving higher productivity through the division of labor. That is, based on the unequal capacities of people and places and the strength of a group compared to that of the individual (von Mises 1996, p. 158). A particular important issue related to this in a modern society is the coordination of knowledge and information for greater productivity and innovation.

The second factor that grows in importance for performance at the meta-level, *ceteris paribus*, is a higher level of unpredictably in terms of particulars. After all, individuals are driven by different motives and beliefs. As stated by Mowles (2011, p. 19):

> The interweaving of intentions, hopes, aspirations, and behavior of people who are both inside and outside organizations, who behave both rationally and irrationally, will bring about outcomes which no one has predicted and which no one has planned.

Hence, the uncertainty related to follower response increases with the variety of beliefs and values of the individuals involved. It has been hypothesized that this uncertainty can be reduced by establishing habits, such as by rewarding certain types of behavior or achievements. Habits in turn can make the environment more predictable, and serve to save mental energy for more novel problem solving. In terms of the evolutionary model presented earlier, this means that imitation through habit and routine has the potential to provide capacity for variability and selection. That is, capacity for imagination and valuation in terms of ideas and decision-making.

However, it has also been attempted to demonstrate that praxeological analysis shows that the sharing of knowledge can reduce uncertainty and thereby improve the basis for individual decision-making. Hence, praxeology demonstrates the importance of the coordination of knowledge in leadership, just as von Hayek (2002) demonstrated it for an economic system. Moreover, it has been proposed that the subjective theory of value provides a tool for understanding what improving such cooperation involves.

From the analysis of leadership it has been shown that Praxeology indeed provides a rich framework for the study of this field and potentially for other fields of action. This richness comes from the subjective theory of value with its implied categories as tools for understanding human action as a process of exchange that sheds light on various social phenomena. By integrating it with evolutionary

theory as has been done in this book, one has an even richer framework that could give better insight into phenomena of change. Indeed, House (1996) has pointed out that lack of such insight is a weakness in empirical leadership theories based on traits, behavior, and situation.

Epilogue

Our purpose in this book has been to bring praxeology into today's social science by showing how it could be fruitfully employed in other fields than economics. Indeed we believe that its aprioristic paradigm can pave the way for many research opportunities. Yet, the discussion presented has been of a purely philosophical and theoretical nature, and it needs to be applied in field research. This includes within the area of leadership, which has received particular attention in this book, but also other fields of social science.

However, we would also like to suggest a couple of other directions for scholarly efforts. The first is to expand or merge the ideas of scholars other than Mises in the manner of the current work by applying them to the field of leadership, such as those of F.A. von Hayek, Alfred Schuetz, Gabriel Tarde, Bent Flyvbjerg, among others. The second is to pursue more in-depth discussions on specific topics that the framework presented here only generally addresses. For example, the study of knowledge sharing in society as well as in organizations could potentially gain from a deeper praxeological analysis, as could the subjective theory of power that has been introduced.

The power of Praxeology lies not in that it can generate quantitative prediction. The reasons for why this may be difficult with *any* available model have been elucidated. Rather, its power lies in presenting the general a priori factors that can be used in qualitative prediction. That is, it can be used to explain, interpret, or understand any situation involving human action systematically and in a universal language. As such, the praxeological method could serve as a meta-tool for the accumulation of expert knowledge in the social sciences and as a potent foundation for model building. Indeed, it has been demonstrated in this work that the parameters of other frameworks can be fully absorbed by it and with synergistic effects.

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