

Chapter 2

The Interpretative Nature of Knowledge: Hermeneutics and Sensory Order

2.1 Introduction

The primary intention of this book is to investigate the non-atomistic variant of methodological individualism which, following Friedrich Hayek, I shall in future call “methodological individualism”. According to methodological individualism, social phenomena are emergent properties deriving, largely unintentionally, from the interactions between autonomous individuals – autonomous in the sense that they are not controlled by environmental factors, but are self-determined (see Laurent 1994).

Methodological individualism challenges the holistic theory of heteronomy. Unlike the latter, it locates the cause of the action and its consequences within the individual – within the way the individual evaluates things (see Hayek 1952a, pp. 54 ff.). According to methodological individualism, humans are free beings because they are not influenced passively by their environment; instead, they interpret it actively. Consequently, a work which aims to clarify (non-atomistic) methodological individualism, and specifically its epistemology of action, needs to explain the interpretative presuppositions of action. As Hayek (1952a, pp. 25 ff.) stressed, holistic sociology has been unable to see the unintentional and complex nature of the social process because it denies that humans act with intentionality: it overlooks the interpretive dimension of choice. This conceptual blindness has led holistic sociology to focus on social conditioning and the alleged environmental determinants of action rather than on the aggregate effects of multiple purposeful human evaluations.

An analysis of action requires an analysis of knowledge. Defending the autonomy of the individual means defending the idea that knowledge is interpretation because this idea implies that environment cannot mechanically determine action (as I shall clarify later, by the idea that knowledge is interpretation I do not mean

This chapter draws on my article “Hayek and the Hermeneutics of Mind”, *Social Science Information*, 2015, Vol. 54 (2): 177–191.

that knowledge is purely arbitrary and relative, as argued by postmodernist philosophers, but a view that it is consistent with the objectivity of truth). To investigate the interpretative presuppositions of action, this chapter compares Hayek's concept of knowledge with that of Hans-Georg Gadamer, the most important theorist in the hermeneutical tradition of the twentieth century.

Gadamer never uses the term "methodological individualism". However, he conceived action in the same way as did methodological individualists. He rejected any analysis of behavior that ignores the subjective standpoint of the individual. Following Max Weber, he defended an interpretative sociology. It is no coincidence that, while Hayek and Gadamer did not have any exchanges and apparently did not influence each other, many have suggested that they share a similar view of knowledge (e.g. Lavoie 1991). It is the intention to compare these two thinkers, and especially to investigate the idea of mind as an apparatus of interpretation developed by Hayek in his pioneering work *The Sensory Order* (1952b), a book that provided one of the earliest connectionist-type theories of mind (see Butos 2010). Though *The Sensory Order* is devoted to cognitive psychology, it also addresses a wide range of issues including the connections between action and interpretation within methodological individualism. The epistemological and sociological implications of this book have been neglected, partly because it analyzes action from a neurophysiological angle, an approach not congenial or familiar to many in the humanities and the social sciences. Moreover, these implications are not developed by Hayek in a detailed and completely explicit manner. By investigating Hayek's conception of mind from a hermeneutical perspective, I clarify the connections between *The Sensory Order* and the *Verstehen* tradition – connections that have not been studied extensively. Several articles have shown that Hayek's cognitive psychology can plausibly be related to the hermeneutical tradition, to which Gadamer belongs (see Boettke 1990; Koppl 2008, 2010). However, no scholar has to date attempted to analyze Hayek's proto-connectionist theory of consciousness in light of the categories found in Gadamer's phenomenological hermeneutics. Filling this gap will enable us to elucidate the links between action and interpretation within methodological individualism and the *Verstehen* tradition. This chapter enables the reader to understand Chaps. 3, 4 and 5, which deal with the relationship between action and the socio-cultural world – an issue that is not addressed directly here.

In essence, Hayek and Gadamer's philosophical views on knowledge were identical. Both basically agreed that all human knowledge, including scientific knowledge, was interpretation. They regarded all knowledge as interpretation for two reasons. First, they saw knowledge as being dependent on a selective point of view: what Gadamer called a "horizon". Second, they stressed that any viewpoint (any horizon) is always shifting because it is temporally conditioned: it is the product of history and changes over time. Hayek and Gadamer also agreed that, since the human being is an interpreter, he/she is hermeneutically free; that is, autonomous from his or her environment. For them, the actor cannot be determined mechanically by the environment. This idea is crucial to methodological individualism, an approach that challenges the paradigms of heteronomy. Unlike Gadamer,

Hayek did not defend this idea only from a philosophical standpoint. Rather, he went beyond hermeneutics and did something original: he combined the concept of the individual as a free being because he or she is an interpreter with a theory of mind expressed in terms of a complex self-organizing system. This chapter compares Hayek's psychology and Gadamer's philosophy in order to clarify the hermeneutical dimension of Hayek's proto-connectionist theory of the phenomenal world and his defense of the hermeneutical concept of autonomy. Hayek's original contribution to the theory of knowledge, neglected in the literature on methodological individualism, allows us to analyze some crucial issues in the methodology of the social sciences from a fresh perspective, and improve the conceptual tools for challenging the sociological paradigms of heteronomy.

It is my opinion that, in order to show the similarities between Hayek's theory of the perceptual world and Gadamer's phenomenological theory of consciousness, it is useful to invoke the findings of the so-called *enactive* or *neurophenomenological* paradigm. This paradigm represents a heterodox approach in cognitive science – a science that, in origin, was dominated by a positivist theory of knowledge. The *enactive* paradigm is an improved and more recent version of Hayek's hermeneutical proto-connectionism (see Marsh 2010b; see also Dupuy 2000, pp. 66 ff.; Petitot 2002, pp. 9 ff.) – a theory, as mentioned earlier, Hayek set out in his *The Sensory Order*, published in 1952, but whose first draft dates back to the 1920s (see Hayek 1952b, pp. v–vi; see also Fuster 1995, 2003, p. 87; Smith 1997; Caldwell 2004, pp. 239 ff.; Butois 2010, pp. 2–5). The epistemological contribution of the *enactive* or *neurophenomenological* paradigm is useful for three reasons. First, advocates of this paradigm have explained more carefully some points that are outlined only briefly in *The Sensory Order*. Second, they illuminated something that Hayek did not recognize: that is, there are affinities between anti-positivistic connectionism – the kind of approach Hayek defends – and the way the hermeneutical tradition conceives knowledge. And third, though enactivists such as Francisco Varela and Humberto Maturana did not focus on sociological issues, they strengthened Hayek's arguments indirectly in favor of the concept of “autonomy”, which is defended by methodological individualism.

The claim that knowledge is interpretation does not entail endorsing a cognitive relativism as the one defended by the postmodernist epistemologies. Many authors who tried to synthesize Hayek's epistemology and hermeneutics did not make this point clearly enough, thereby muddying the waters. This chapter emphasizes that hermeneutics, at least as intended by Gadamer, is not a kind of nihilist or skeptical socio-historical relativism. Since Hayek was a Popperian – from Karl Popper (1902–94) –, a point in favor of any continuity (or similarity) between Hayek's and Gadamer's views is a defense of a fallibilistic interpretation of Gadamer's work and his theory of objective truth. It is clear that not all works within the hermeneutical tradition are compatible with Hayek's epistemology and methodological individualism (see Fleetwood 1995, pp. 20 ff.). This is the case, for example, of Wilhelm Dilthey's later social theory, which is holistic; or of Gianni Vattimo's conception of scientific knowledge that argues for the socio-cultural relativity of truth and is both relativistic and anti-individualistic. As will be clarified, according to

methodological individualism, because the actor is autonomous and there is universal rationality, truth is not a mere epiphenomenon of the socio-cultural environment. Gadamer agrees neither with Dilthey's later holistic perspective, nor with Vattimo's postmodernist theory of scientific knowledge.

The discussion in this chapter proceeds as follows. Sections 2.2–2.5 aim mainly at clarifying what exactly constitutes the Gadamerian theory of interpretation. By criticizing a widely held idea, it is argued that this theory is not supportive of an anti-scientific perspective; rather, it is basically consistent with the conceptual framework of Popper's unified theory of science. These sections also investigate the connections between hermeneutics and Austrian marginalism, the school of thought to which Hayek belonged, based on the study of economic and social phenomena in terms of methodological individualism. Sections 2.6–2.14 compare the hermeneutical analysis of consciousness with Hayek's cognitive psychology. Moreover, they deal with an issue, so dear to the hermeneutical tradition – the autonomy of the human being from the environment. Sections 2.15 and 2.16 deal with the study of the relationship between the temporality of knowledge defended by both Hayek and Gadamer and anti-foundationalism.

2.2 The Evolution of Hermeneutics: From the Science of Textual Interpretation to the Philosophy of Knowledge

To understand the reasons that legitimize methodological individualism, we need to understand action, and to understand action, we need to understand the concept of knowledge. Specifically for our purposes here, we need to understand the similarities between Hayek's and Gadamer's theories of knowledge. But before analyzing these similarities, it will be useful to survey the hermeneutical tradition.

As traditionally defined, hermeneutics is “the art of interpretation” (Lawn 2006, p. 44). The word hermeneutics is derived from “the Greek term *hermeneuein*, meaning to interpret” (ibid., p. 45). As Moran (2000, p. 271) underlines, in Greek mythology, Hermes (associated with *hermeneuein*) “was the messenger of the gods, a go-between between gods and humans, who tells lies as well as truths, who misleads as well as leads”. Because they were ambiguous, his speeches needed to be interpreted, and their meaning was controversial. Thus, for the Greeks, “interpretation was the elucidation and explanation of elusive sacred messages and signs” (Lawn 2006, p. 45).

After the Greeks, it was the Protestant theologians of the seventeenth century who took the next significant step in developing what we today regard as hermeneutics. Protestant theologians wanted Protestants to understand God's ways; they wanted to provide translations of the Bible that could be understood and welcomed by ordinary people. To do that, they “devised *hermeneutica*” (Lawn 2006, p. 45; see also Crotty 1998, pp. 88–90; Ricoeur 2007, pp. 86 ff.), a science for studying

the general principles of textual interpretation and good translation. Usually known as “classical hermeneutics”, it only began to be known by this term during the seventeenth century, its origins being in the Middle Ages, when various authors constructed a methodological framework for the interpretation of biblical, legal and classical texts (see Grondin 2006, pp. 5–6). Classical hermeneutics is linked strictly to *rhetoric*, the study of argumentation and persuasion (see Gadamer 1981, p. 123). It takes from the latter many of its principles and rules. For example, the case for the original version of the so-called “hermeneutical circle”, according to which the “whole is to be understood in the relationship to the parts, and the parts to the whole” (Lawn 2006, p. 47; see also Grondin 2006, p. 11). This notion is linked to other interpretative guidelines such as the rule according to which the meaning of a word or statement depends on the context; or the rule affirming that a mind which understands a meaning is not an empty mind, but a mind interpreting the text in light of shifting *a priori* – a horizon that changes as one progresses in reading the text.

During the Romantic Era, the hermeneutical tradition started to “move from textual interpretation to the more general question of the nature of understanding” (Lawn 2006, p. 46). The key figure in this “change” (Gadamer 2006, p. 175) was the German philosopher and theologian, Friedrich Schleiermacher (1768–1834). He concluded that hermeneutics is applicable not only to texts, but also to all other manifestations of human life; that is, “to all forms of interpretation” (Lawn 2006, p. 46; see Grondin 2006, pp. 6, 20).

After Schleiermacher, the attempt to extend the hermeneutical task was carried on by his biographer and follower Wilhelm Dilthey (1833–1911). The latter used the hermeneutical tradition and its philosophical implications to oppose the development of scientific and holist sociology. Especially in his early works, Dilthey took issue with holist sociology by arguing that, to understand human behavior, actions must be regarded as texts that need to be interpreted. Dilthey rules out the possibility that human actions are the mechanical effects of social or historical laws that unconsciously control and undermine the autonomy of agents. According to Dilthey, what determines the dynamics of the human world are meanings instantiated in human minds rather than causes acting on individuals from the outside. He defends “human freedom” (Gadamer 2006, p. 202) and devises an interpretative sociology that anticipated and partly inspired the work of scholars such as Georg Simmel (1858–1918) and Max Weber (1864–1920). Dilthey also argued that there is a strong and irremediable difference between the interpretative method of the social sciences and the causal approach of the natural sciences – a thesis which, as we will see later, was in many ways not shared by the late Gadamer.

Another philosopher who contributed – at least indirectly – to an extension of the interpretative approach to the analysis of human action is Edmund Husserl (1859–1938) (see Gadamer 2006, pp. 234–241). As is well known, Husserl is considered to be the father of phenomenology, a philosophical theory that studies the features of consciousness. Phenomenology rejects objectivism, the positivist thesis that science studies neutral and given data. In Husserl’s view, this thesis is

wrong because it does not consider the implicit presuppositions of experience. For him, the theories of science are based on tacit knowledge, which is prior and builds the world of our consciousness, the upshot being that tacit knowledge constructs the way that things are intuitively and immediately given to us (Petitot et al. 1999, pp. 1 ff.; Gallagher and Zahavi 2008, pp. 19, 24). Husserl thought that the meta-conscious presuppositions of explicit and reasoned knowledge consisted in an interpretative and selective process – a process linked to variable contextual and temporal *horizons* of expectations, including our cultural framework. Consequently, he used a hermeneutical approach to understand the construction of the phenomenal world, the way that things immediately appear to us (see Gadamer 1997, pp. 130–181; Moran 2000, pp. 60 ff.).

Husserl's pupil, Martin Heidegger (1889–1976), is a key figure in the evolution from classical or textual hermeneutics to philosophical hermeneutics. While Husserl applied the interpretative procedure to the analysis of consciousness by stressing the implicit and temporal presuppositions of the phenomenal world, Heidegger came to the more radical conclusion that *being* itself, life under all its aspects, is temporality and interpretation (Gadamer 2006 pp. 247–248). He does not merely devise a method to disclose and understand the implicit basis of experience, but elaborates a philosophy of “the original characteristic” of human existence (ibid., p. 250). Developing Husserl's perspective, Heidegger investigated no less than the meaning of life, and came to the conclusion that life consists of a continuous reworking of projects and constant interaction with changing situations and contexts. Consequently, he pointed out that life is a ceaseless understanding (or interpretation) in the light of a shifting and relative standpoint – an understanding that involves, first and foremost, practical or intuitive abilities, a *know-how* more than a *know-that* (see Crotty 1998, pp. 97–100; Westphal 2008, pp. 419–426). In addition, Heidegger emphasized (more than Husserl) that the ineradicable temporality of our knowledge implies our finitude, i.e. the impossibility of attaining ultimate and absolute certitudes and truths (see Gadamer 2006, pp. 244 ff.; Lawn 2006, pp. 53–58). According to Heidegger, for human beings, the only real certitude is death. In this sense, his hermeneutical analysis of the human condition is pessimistic, unveiling the agonizing aspects of life (see Grondin 2002, pp. 31–51; 2006, pp. 28–29).

Heidegger's pupil, Hans-Georg Gadamer (1900–2002), did not share such a pessimistic outlook, but he took up and developed many aspects of Heidegger's thought. He devised in a more detailed way the principles of philosophical hermeneutics and made the concept well-known within philosophical circles. Like Heidegger, Gadamer criticized the positivist “myth of the Given” and the idea that knowledge starts from a mind conceived as a *tabula rasa*, being filled up with theories through naive observations, as it is generally asserted by inductivism. Following his mentor, he investigated and endorsed the idea that humans are basically interpreters linked to a historical perspective – a perspective that is shifting continuously. Its variability, he argued, depends both on the fallibility of our empirical knowledge and the temporal relativity of its metaphysical preconditions (for example, value choices). Because of this, Gadamer affirmed, in accordance with Heidegger, that humans are historically finite beings. However, in contrast to

Heidegger, he did not develop an existential hermeneutics. He was more concerned with purely epistemological problems rather than with the meaning of life. Specifically, he applied Heidegger's approach (or part of it) to rethinking and improving Dilthey's hermeneutical analysis of the methodology of the social sciences (Grondin 2002, pp. 49–50; 2006, pp. 48–49; see also Dostal 2002, pp. 247 ff.).

2.3 The Non-arbitrary Nature of Understanding: The Convergences Between Hermeneutics and Fallibilism

Having surveyed the basics of hermeneutics, we now turn our attention to Gadamer's concept of understanding. Given that Hayek defined his approach as Popperian, to argue that Hayek and Gadamer share the same standpoint presupposes a compatibility between Gadamer's and Popper's theories of knowledge, a compatibility that has often been denied. Rejecting a widespread and popular view, the discussion will attempt to explain that hermeneutics and fallibilism are two different terms actually referring to the same idea.

As is well known, Popper defended a unified epistemology, i.e. the idea that there is no difference between the method of the natural sciences and the method of the social sciences. The later Gadamer distanced himself from Dilthey's radical methodological dualism and endorsed Popper's view. He argued that the positivistic image of the natural sciences, an image that Gadamer supported in *Truth and Method* (2006) – usually considered to be a correct description of the method of the natural sciences by the standards of dualist epistemologies, is actually wrong. More precisely, Gadamer (1985, p. 495) acknowledged that the way in which philosophical hermeneutics conceived of the process of knowledge acquisition was not incompatible with Popper's anti-positivist theory of science. According to Popper (1980, p. 353), the way Gadamer described the process of knowledge acquisition is merely the method of trial and error advocated by fallibilism – a method shared with the natural sciences. The traditional tendency of hermeneuticians to defend a dualist approach, Popper pointed out, is precisely the result of their own mistaken view of the scientific method; i.e. the fact that they accept positivism implicitly and uncritically as the only philosophy appropriate for the natural sciences (ibid.).

Within the theory of interpretation, the hermeneutic circle is the process by which we understand a text. According to Gadamer's version of it, a text is a very expansive concept, referring not only to written words, but also, for example, to artworks, theories and human actions. The first systematic analysis of the analogy between Popper's trial and error method and Gadamer's theory of the hermeneutic circle was developed by Antiseri (1981, pp. 159–276). In Antiseri's view, the approaches of Popper and Gadamer in particular “refer not to two different procedures but to the same one (and this, despite the differences in ‘parlance’ used to describe each)” (Antiseri 2006, p. 34). More recently, Antiseri's view has been defended by other scholars (in particular, Grondin 2003, p. 454; Di Nuoscio 2004,

pp. 93–106; Mantzavinos 2006; Franco 2012).¹ Following Antiseri, it is possible to stress the following points briefly.

According to Popper, knowledge does not presuppose an empty mind; for him, we belong to a tradition. He states: “Without tradition, science would be impossible ... Knowledge cannot start from nothing” (Popper 2002, p. 36). In particular, Popper assumed that science begins when expectations, derived from past experience, are disappointed. Science “always begins ... with problems” (Popper 1994, p. 155) – problems arising when a conflict occurs between expectations and experience. The scientific method, he argued, can be summarized by three words: problems, conjectures and refutations. To put it another way, it can be described briefly as follows. Faced with a certain problem, the scientist offers, tentatively, some sort of solution: a theory. Science accepts this theory only provisionally, if at all; and it is most characteristic of the scientific method that other scientists will spare no pains to criticize and test the theory in question. Criticizing and testing go hand in hand (Popper 2002, p. 313). Testing the theory proceeds by exposing its

vulnerable points to as severe examination as possible ... Theories are put forward tentatively and tried out. If the outcome of a test shows that the theory is erroneous, then it is eliminated; the method of the trial and error is essentially a method of elimination (ibid.).

This approach allows access to an objective knowledge – meaning “objectivity ... nothing other than controllability of proposed hypotheses” (Antiseri 2006, p. 41).

Let us now consider Gadamer’s philosophy. As Antiseri (ibid., p. 42) states, according to Gadamer, the interpreter of a text does not read it with a mind similar to a *tabula rasa*, but with his or her own set of preexisting understandings, “i.e. with his own prejudices, his presuppositions, his expectations”. A “person who is trying to understand a text”, Gadamer (2006, p. 269) argues, “is always projecting ... a meaning”. With a given text, and a given “pre-comprehension” on the part of the interpreter, the interpreter sketches out a preliminary “meaning”, a “fore-projection”. This sketch is possible precisely because the interpreter’s mind is not empty, but is endowed with “specific expectations which are the fruit of his own pre-comprehension” – a pre-comprehension depending on the interpreter’s *a priori* categories which are linked to what he or she knows and the tradition or history to which he/she belongs (Antiseri 2006, p. 42). For Gadamer (2006, p. 269), this preliminary meaning, this “fore-projection ... is constantly revised in terms of what emerges as he penetrates into the meaning”. Every

revision of the fore-projection is capable of projecting before itself a new projection of meaning; rival projects can emerge side by side until it becomes clear what the unity of meaning is; interpretation begins with fore-conceptions that are replaced by more suitable ones. This constant process of new projection constitutes the movement of understanding and interpretation (ibid.).

¹It is significant that Albert, who previously strongly criticized Antiseri’s position, finally ended up acknowledging the existence of undeniable similarities between Gadamer’s and Popper’s perspectives (see Albert and Antiseri 2002). See also Ricoeur (2007), pp. 159–160.

Therefore it is evident that it is trial and error at work here. During this interpretative process problems inevitably arise. A person who is trying to understand is exposed to errors “from fore-meanings that are not borne out by the things themselves. Working out appropriate projections, anticipatory in nature, to be confirmed ‘by the things’ themselves, is the constant task of understanding” (Gadamer 2006, p. 270).

The problem of interpretation is in the disclosing of empirical truths (see Taylor 2002, pp. 126 ff.; Ricoeur 2007, pp. 159–160). The interpreter needs to test his/her hypothesis by considering both the text and the context (for example, the historical situation in which the text was written, the evolution of the language, the life of the author, and so on). The “hermeneutical activity”, Gadamer maintains, seeks “objectivity”, i.e.

the confirmation of a fore-meaning in its being worked out. Indeed, what characterizes the arbitrariness of inappropriate fore-meanings is not that they come to nothing in being worked out? But understanding realizes its full potential only when the fore-meanings that it begins with are not arbitrary. Thus it is quite right for the interpreter not to approach the text directly, relying solely on the fore-meaning already available to him, but rather explicitly to examine the legitimacy – i.e., the origin and validity – of the fore-meanings dwelling within him (Gadamer 2006, p. 270).

Like classical hermeneutics – which attempted to define the criteria for the correct and objective interpretation of a text – Gadamer’s philosophical hermeneutics is incompatible with cognitive skepticism. He argued that it is possible to establish a valid interpretation of a text, while still defending the objectivity of truth, and acknowledged that we can understand what is empirically correct: “Meanings cannot be understood in an arbitrary way” (Gadamer 2006, p. 271). We “cannot stick blindly to our own fore-meaning about the thing if we want to understand the meaning of another” (ibid.). Meanings “represent a fluid multiplicity of possibilities ... but within this multiplicity of what can be thought – i.e., of what a reader can find meaningful and hence expect to find – not everything is possible” (ibid.). In other words, meanings are not purely subjective: “a person trying to understand a text is prepared for it to tell him something. That is why a hermeneutically trained consciousness must be, from the start, sensitive to the text’s alterity” (ibid.).

2.4 Hermeneutics and the Austrian School

The central aim of this chapter is to clarify what it means when we say that action presupposes interpretation. In the support of this, the discussion will compare Hayek’s theory of sensory knowledge with Gadamer’s hermeneutics. Before dealing with the central issue of the chapter, some preliminary remarks must be made. In the previous section I showed that Gadamer’s theory of truth is not incompatible with Hayek’s Popperian epistemology. In this section, it will be stressed that the notion that Hayek’s epistemology matches hermeneutics is not new. It will be shown that the effort to combine Hayek and Gadamer has support

from other scholars. However, it will be argued that some of these scholars misconceived hermeneutics. Instead of making the point that hermeneutics is not akin to postmodernist relativism, they seemed to assume that it was. In my opinion, understood as arbitrariness, the concept of interpretation is inconsistent with the way it is viewed by Gadamer and Hayek.

The first to stress similarities between hermeneutics and the philosophy of the Austrian School was Ludwig Lachmann (1906–90), Hayek’s pupil. He emphasized that the Austrian School’s methodology of the social sciences can be considered to be a particular manifestation of an older and larger interpretative tradition, as a result of its criticism of scientism and sociological holism. Lachmann in particular focused on the links between this tradition and the Austrian theory of action. He wrote: “Characteristic of the trend of thinking of the Austrian school, is, in our view, *Verstehen* (understanding), introduced as a method into the theoretical social sciences” (Lachmann 1977, p. 47). Such a method, he pointed out, “has, as is well known, a long and glorious history” (ibid.) – a history that started with the development of hermeneutics – the science of textual interpretation. According to Lachmann (2007, p. 20), the foundation of the Austrian School’s methodological individualism is nothing “more than the classical method of interpretation applied to overt action instead of to texts, a method aiming at identifying a human design, a ‘meaning’ behind observable events”. As affirmed in Chap. 1 of this book, without using the *Verstehen* approach (which rejects methodological holism and assumes that the intentionality of the actor matters) it is impossible to explain society in terms of unintended consequences and as a complex, self-organized system.

Like Lachmann, others, such as Don Lavoie and Richard Ebeling, have equally underlined the similarities between the Austrian approach and hermeneutics. In particular, these two authors and their followers have tried to merge Austrian economics with phenomenological hermeneutics, such as that proffered by Heidegger and Gadamer. Their goal was to put the Austrian criticism of positivism on a more solid philosophical foundation (see Lavoie 1991, pp. 1–14; see also Campagnolo 2006; Storr 2011 and Di Nuoscio 2014). As Boettke (1990, p. 36) – one of Lavoie’s pupils – affirms, Hayek and the Austrian School developed an interpretative approach toward the objectivist social theories which argue that “*man* had to be purged from the analysis”. This interpretative approach is also called methodological individualism, precisely because it presupposes that action is not a mechanical effect of the material or social context but the consequence of the way individuals interpret their environment and the problems they have to overcome (ibid.).

Boettke (1990, p. 40) also maintained that Hayek’s work on the sensory order is a defense of the hermeneutical perspective (see also Lavoie et al. 1990). Boettke wrote that, according to Hayek’s theory of mind, our “image of the world derives directly from our interpretation of the world, which is always a selective abstraction” (1990, p. 40). Consequently, according to Hayek’s cognitive psychology, to explain an action is a consideration of its meaning. This is the first step to “understand[ing] the diverse patterns of actions that make up the social world” (ibid., p. 41).

That Hayek's theory of the sensory order implies the use of a hermeneutical approach in the social sciences has also been stressed by Roger Koppl. According to him, one of Hayek's great achievements was to bring the theory of complexity "and interpretation together" (Koppl 2008, p. 118). Hayek, Koppl wrote, used a "set of very carefully developed scientific arguments about complexity and neuroscience to show that logically necessary limits of our knowledge of minds like our own require us to rely on ... hermeneutics" (ibid.).

These limits imply that the social sciences cannot be based on the assumption of a contextual determinism, but have to be founded on the "interpretation of human meanings" (ibid.). Though Koppl (pp. 105 ff.) defended classical hermeneutics and Dilthey's work, he was not enthusiastic about Gadamer's phenomenological hermeneutics, being rather doubtful about the compatibility between this view and the scientific method. Moreover, he defended Dilthey's methodological dualism. Consequently, certain aspects of his vision do not match the conception of the philosophy of the social sciences and Gadamer's philosophy as advanced in this book.

The thesis that Hayek's theory of mind implies that all knowledge is interpretation was also defended by Caldwell (2004, p. 247). He maintained, as did Boettke and Koppl, that Hayek attempted to use his theory, according to which the nervous system is a complex phenomenon, "to build a case for a subjectivist approach in economics" (Caldwell 2007, p. 260). Caldwell (ibid., p. 271) also pointed out that, if Hayek's theory of mind was correct, "selection, evaluation, and interpretation take place at every step in the creation of the sensory order". According to Caldwell, for Hayek, every act of categorization "is ... an act of interpretation" (ibid., p. 271) and "all observation is theory laden" (ibid., p. 254). However, while Caldwell agreed with Hayek's anti-positivism, he was wary of hermeneutics. More specifically, he considered hermeneutics as being incompatible with Hayek's theory of science, in particular as Hayek articulated it in his later works – which Caldwell contended are anti-dualist and anti-relativist (Caldwell 2004, p. 249). Caldwell (2007, p. 260) argued that the way hermeneutics handles interpretation conflicts with Hayek's claim that scientific truth is objective. For Caldwell, hermeneutics entails postmodernism and skepticism, and Hayek's "dalliance" with Popperian thought is proof of the incompatibility between his view and that of hermeneutics (Caldwell 1994, pp. 308–311).

I disagree with Caldwell because, as discussed earlier, hermeneutics – and, in particular, Gadamer's conception of it – is not a type of skepticism, but rather a fallibilistic view of knowledge that is compatible with Popper's anti-positivistic theory of the unified method. It is a theory that defends the idea that the natural and human sciences share an approach, not in the sense that positivists believe, but in the sense that fallibilism and critical rationalism assume. However, Caldwell's criticism of the attempt to merge the Austrian approach with hermeneutics has some validity. Many hermeneutical "Austrians" seem to assume that the "hermeneutics" label describes any orientation that admits that observation is theory laden, including nihilistic and socio-relativistic conceptions of knowledge. Some of the articles or collective works published by hermeneutical "Austrians" take Gadamer's

position to be similar to that of disparate authors, including socio-historical relativists such as Thomas Kuhn, Jacques Derrida and Richard Rorty. For example, Madison (1989, pp. 177–178) maintained that the similarity between Hayek’s and Kuhn’s points of view proved that the former is a follower of hermeneutics. In fact, Kuhn’s polylogism and irrationalism² are incompatible with Hayek’s and Gadamer’s thought. Namely, they are not consistent with Hayek’s theory of science and his methodological individualism (see Chap. 6; see also Boudon 2004; Di Nuoscio 2004). Moreover, Madison (1989, p. 177) also affirmed that both the Hayekian and hermeneutical approaches are fundamentally different from Popper’s “revised ... version of positivism” – an epistemology which, for Madison, considers a theory scientific only if it can ensure perfect and detailed quantitative forecasting. This is untrue (see, in particular, Chap. 6).

By failing to distance themselves clearly from post-modernist skeptical philosophy, the Austrian hermeneutists have been criticized strongly by Murray Rothbard and his followers. This criticism, like Caldwell’s, is partly correct. Rothbard is radically adverse to hermeneutics because he endorses an epistemology denying that knowledge is interpretation, and arguing that we are able to know absolute and indisputable truths. In other words, he follows an essentialist and foundationalist approach that is radically incompatible with both hermeneutics and fallibilism. Given what I said above, Rothbard is wrong when he maintains that hermeneutics is an orientation, arguing that no objective truth can be found and defended. He pointed out that “the essential message of ... hermeneutics can be ... summed up as nihilism, relativism, and solipsism. That is, either there is no objective truth or, if there is, we can never discover it” (Rothbard 1989, p. 45). This view must be rejected. As Antiseri (2011, p. 89) pointed out, it is a “wrong interpretation of the theory of interpretation”.

2.5 Clarifying the Notion of the Historicity of Knowledge

To show the compatibility between Hayek and Gadamer, it is necessary to clarify the meaning of the Gadamerian theory of the “historicity” of knowledge. This theory is often regarded as postmodernist and relativist. On the contrary, however, it is a defense of the epistemological presuppositions of research that are very Hayekian. The analysis of Gadamer’s theory of the historicity of knowledge is important in understanding in which sense our understanding of the world is interpretation.

Philosophical hermeneutics developed as a criticism of objectivism. According to objectivism, true knowledge is a neutral and specular representation of a pre-given world (see Gallagher and Zahavi 2008, pp. 15, 24). Gadamer (1997, pp. 131–132)

²Polylogism means that collective beliefs are socio-culturally determined; irrationalism means denying that these beliefs are endorsed by individuals for rational reasons.

maintained that objectivism is wrong, because we cannot achieve a direct, mirror-like and complete access to reality. In his opinion, we cannot know reality as it is in itself. Like Kant, he thought that there is “a disproportion between form and essence” (Gadamer 2006, p. 67). For Gadamer, we can only know the world by selective interpretation – an interpretation based on historically variable and fallible a priori presuppositions. According to him, there is no view from nowhere, because knowledge is always informed by a particular background. Minds are necessarily informed by a horizon, i.e. relative to a standpoint (see Grondin 2006, p. 49). The “standpoint that is beyond any standpoint is a pure illusion” (Gadamer 2006, p. 369). That being so, we are finite beings. The fact that there is an interpretative horizon “limits the possibility of vision” (ibid., p. 301). Gadamer held that there is absolutely no form of knowledge that is simple representation. Even a picture, he wrote, cannot be considered to be a pure reflection of reality (at least of the way reality appears to us). It is “not a copy, for it presents something which, without it, would not present itself in this way. It says something about the original” (Gadamer 2006, p. 135; see also Bernstein 2002, p. 273).

The fact that Gadamer argued that all knowledge is interpretation has sometimes been misunderstood and confused with a form of skepticism. This largely depends on an incorrect estimation of Gadamer’s idea that knowledge is always characterized by “a temporality and historicity” (Gadamer 2006, p. 247). The intention is consistent with Popper’s critical rationalism, but incompatible with epistemological skepticism. Like Popper, Gadamer argued that the a priori conditions of knowledge are historical, for two reasons. First, there is an implicit metaphysical framework to empirical knowledge that is temporally variable. This framework is composed of language conventions, value-choices, metaphysical research programs, and other non-empirical assumptions of science. Second, empirical knowledge – knowledge based on this non-falsifiable framework – cannot be considered to be objective in the sense of being absolutely certain. In other words, because of their hypothetical nature, empirical truths are fallible. Consequently, they are not necessarily eternal.

Let us try to clarify Gadamer’s stance by taking a few cases into consideration. We focus, for example, on the issues related to the study of the past. What did Gadamer consider to be a historical fact? According to him, a historical fact, like any other fact, cannot be known in itself: it “is not an object that stands over against a subject for itself” as the objectivists believe (Gadamer 2006, p. 103). On the contrary, it is built conjecturally and selectively. It is a “fact” in the light of a priori presuppositions (the word “fact” comes from the Latin *factum*, meaning “what is built”). Can we conceive, for example, of the Middle Ages as a fact in the sense of given data? Can we know it by a representation of its essence? In other words, can we completely and absolutely know it as naive empiricism supposes? Is knowledge simply representation?

One of the reasons why knowledge is not simply representation has been made famous by Weber (1978, pp. 69 ff.). Like Gadamer, Weber pointed out that every historical fact is built, among other things, on the basis of the historian’s values and interests. Those basic heuristic assumptions (important in every scientific field) are part of what Gadamer considered the variable metaphysical framework of empirical

knowledge. They enable the historian to select an object of study among infinite others (see also Antiseri 1996, pp. 313 ff., 550 ff.; Di Nuoscio 2004, pp. 25–31, 2006, pp. 91 ff.). For example, we can consider the Middle Ages from different perspectives: its architecture, politics, food, women, crafts and so on. Moreover, we can try to recount, at least hypothetically, all the loves and passions of every man and woman who lived during this particular period. At least in theory we can also consider the kinds and weights of all the fish caught by a specific fourteenth-century French fisherman during his life. The perspectives are infinite, and because of that, the Middle Ages cannot be completely known. It cannot be described in terms of specular representation. In other words, it cannot be seized on as an essence, without selecting a horizon or a limited set of standpoints, in the light of certain values and interests.

Thus we have an example here of what Gadamer meant by non-falsifiable presuppositions of scientific research. So, what did he mean by stating that these presuppositions have a specific temporality? For Gadamer, the metaphysical framework and empirical research are influenced by their historical and circumstantial context. Let us again consider the role played by the historian's values and interests. According to Gadamer, the facts of the past, set out in books, have been built selectively and conjecturally by historians on the basis of values – values that are linked to problems, needs, knowledge, tragedies, aspirations, curiosities and so on, that historians have experienced during their own lives (see Di Nuoscio 2006, pp. 100–103), for example, the influences that the development of the feminist movement had on certain historical and sociological studies. Feminism favored the growth of a new sensitivity, stimulating the empirical analysis of the role of women throughout history, based on a perspective that previously did not exist. Croce (1921, p. 11) explained this point by stating that “every true history is contemporary history”. According to this view, knowledge of the past is not temporally and circumstantially neutral, and this is something inevitable. A standpoint is always required. History, Gadamer (1981, p. 140) wrote, “can be illuminated only in the light of what came later and from the perspective of what followed.”³

Let us consider the second reason Gadamer used to justify his theory of the “historicity of knowledge”. As already noted, Gadamer underlined that the construction of a scientific fact does not only require non-empirical *a priori* preconditions, but also empirical ones. According to him, a historical fact is based on empirical descriptions and explanations, and it only exists in so far as those descriptions and explanations are correct and non-falsified (see Antiseri 1996, pp. 331 ff.; Di Nuoscio 2004, pp. 289 ff.; 2006, pp. 83–85). This is the second reason why we can grasp the past by what Gadamer calls “historicity” – for him, by virtue of the fallibility and theoretical nature of empirical statements, our scientific

³It should be noted that, though Croce's ideas on this point are compatible with Gadamer's and Popper's theory of objective truth, his idealistic pretense to know the direction of history is not. The fact that Popper (1957) calls this pretense “historicism” and strongly criticizes it must not lead to misunderstandings. As intended by Popper, “historicism”, understood as an epistemological mistake, has nothing to do with Gadamer's notion of the historicity of knowledge of the past.

knowledge is temporally variable. According to him, we cannot be absolutely sure about what we know about the past. Therefore, we cannot rule out the possibility that we, or others who come after us, will look at it differently. Gadamer (1981, p. 164) upholds that recognizing human fallibility “constitutes a hermeneutic dimension”. Fallibility is another aspect to our historical finitude. Both the selective nature of knowledge and the lack of certainty imply finitude in that they undermine the positivistic pretense of absolute truth.

Let us ponder another historical example. As Di Nuoscio (2006, pp. 87–88) pointed out, the belief that the Papal States were formed when Constantine I donated the territories comprising them to the Roman Catholic Church, was considered to be an unquestionable fact for a very long time. However, in 1440, the philologist Lorenzo Valla demonstrated that the document attesting to Constantine I’s donation – known as the *Constitutum Constantini* – was a forgery. Valla showed that the *Constitutum Constantini* could not possibly have been written in the era of Constantine I, for several reasons. One of these was that its vernacular style was dated to a later era. This example shows that, because of the fallibility of our knowledge and its temporal variability, ‘facts’ can cease to exist.

As Gadamer (1981, p. 109), wrote, “understanding always remains a risk”. It “is an adventure and, like any other adventure, [it] is dangerous” (ibid.). The “justification of knowledge, in the sense of a certitude removed from all doubt” is “an impossible task” (ibid., p. 163). Consequently, *inductivism* and *verificationism*, attempts to describe the logic of knowledge acquisition and empirical control, are based on misleading epistemological presuppositions. Empirical control “is achieved ... by the continuing absence of counterinstances that would amount to falsification” (ibid.). According to Gadamer, Popper developed a standpoint that hermeneutics had advocated for a long time: “It was a coherent sharpening of the logic of confirmation when Karl Popper raised falsifiability instead of verifiability to the status of a logical condition of scientific propositions” (Gadamer 1981, pp. 163–164). For Popper, “[E]xperience can refuse the anticipated confirmation” (p. 164). The “theory of trial and error that Popper worked out is not at all confined to the logic of specialized inquiry” (ibid., p. 165). It “makes plain a notion of logical rationality that reaches far beyond the field of scientific research and describes the basic structure of all rationality, even that of practical reason” (ibid.).

Neither Hayek nor Gadamer said that their views were similar. However, Gadamer and Popper argued that the hermeneutical theory of the historicity of knowledge is consistent with fallibilism. If this is the case, Hayek’s epistemology may be regarded as compatible with Gadamer’s. Like Gadamer, Hayek criticized objectivism and essentialism. According to him, “science can deal only with the abstract” (Hayek 1978, p. 48), because it is based on selective a priori categories. We must get rid of “the misconception that the totality (i.e., all possible aspects) of a particular situation can ever constitute one single object of thought” (Hayek 1952a p. 68). Like Gadamer, Hayek believed that the fallacy of *conceptual holism* depended first on the existence of a metaphysical framework of empirical research. Moreover, like Gadamer, he thought that a fundamental component of this metaphysical framework was constituted by the scientist’s interests and values,

according “to the question we ask, the same spatio-temporal situation may contain any number of different objects of study” (Hayek 1952a, p. 70). To clarify his position, Hayek considered the study of history. Like Gadamer, he pointed out that the interpretation of the past in the light of certain value-choices does not necessarily imply arbitrary conclusions and the impossibility of reaching an objective truth:

there are, of course, many reasons why at different times people will ask different questions about the same period. But this does not mean that history will at different times and on the basis of the same information give different answers to the same question (ibid.).

The truth “is that historians will at different times be interested in different objects, but not that they will necessarily hold different views about the same object” (ibid.).

Hayek also agreed with Gadamer’s idea that knowledge is variable interpretation because of (other than its selective nature) its fallibility. Our scientific knowledge is “not justified or justifiable in the way ... [the verificationists] demand” (Hayek 1988, p. 68). In accord with Popper, Hayek argued that scientific theories are those that can be refuted. We “have reason to suppose that we shall eventually learn that many of our present scientific conjectures are untrue” (ibid., p. 68). Any scientific “theory ... can be falsified. Its empirical content consists in what it forbids” (Hayek 1967, p. 32).

2.6 Hayek and the Neuro-Phenomenological Paradigm

Having made a case for the view that Gadamer’s hermeneutics is not a species of postmodernist relativism, but rather is consistent with Hayek’s fallibilism, I am now well placed to deal with a reinterpretation of Hayek’s cognitive psychology in the light of Gadamer’s phenomenological and hermeneutical theory of consciousness. This will help in understanding the connections between Hayek’s anti-objectivist theory of the self-organizing mind and his defense of methodological individualism. Hayek (1952a, pp. 44 ff.) called “objectivistic” all the views that deny the relevance of the subjective standpoint – the way the individual interprets his/her environment – for the explanation of action. His proto-connectionist conception of the mind was anti-objectivistic precisely because it was different from other theories of the self-organizing mind that link a connectionist approach with a Positivist theory of knowledge and the assumption that action is adaptation to pre-given data. Unlike Hayek’s analysis of the sensory order, these theories are incompatible with the phenomenological tradition (see Gallagher and Zahavi 2008, pp. 14 ff.).⁴

⁴In spite of the terminological ambiguity, Hayek’s criticism of objectivism must not be misunderstood: it was a criticism of specific theories of action and has nothing to do with the concept of objectivity as intended by Popper’s anti-skeptical epistemology. As we stated earlier, Hayek shares Popper’s standpoint on postmodernism.

To analyze in detail the similarities between Hayek's cognitive psychology and Gadamer's theory of consciousness, as well as the link between the autonomy of the actor and interpretation, it is useful to consider the way in which Hayek's discussion in *The Sensory Order* (1952b) is related to some of the contemporary debates in cognitive science.

Some recent heterodox developments in cognitive science show indirectly the existence of an analogy between Hayek's theory of mind and the perspective of philosophical hermeneutics. As Lachmann (2007, pp. 42–43) stressed, the orthodox or dominant paradigm in cognitive science, called computationalism (see Carter 2007), is incompatible with the epistemology of the Austrian School. Hayek's pupil remarks that this paradigm is "the more recent version" of an older scientific and "mechanistic approach" in the social sciences (Lachmann 2007, p. 42). For Lachmann, computationalism looks "at human action by analogy to a feedback system" like a computer (*ibid.*). Because of that, computationalism is a form of objectivism. It considers the mind as a system using information coming from the outside and translating it "into appropriate action" (*ibid.*); "the 'information' it uses requires no act of interpretation" (*ibid.*, p. 43) or, at least, no interpretation as intended by the hermeneutical tradition. The system establishes adaptive responses to given data. Consequently, the cause of action is not inside the system, but outside, i.e. in objective features of reality.

In addition, according to older theories invoking the mind–computer analogy, action, unlike Hayek's assumption, is not based on presuppositions that can change unpredictably over time. Actions are regarded as being predetermined by a program which mechanically induces responses to typical objective events that it catalogues. A "feedback system can 'deal' with a finite number of occurrences because it is equipped to do so" (Lachmann 2007, p. 43). Since its instructions are limited numerically, it cannot do what a human being can: it cannot perform actions that are truly creative, i.e. radically unpredictable. It must be noted that the more recent versions of computationalism are quite different from the simplistic earlier theories of the mind–computer analogy that Lachmann criticized. These refined versions of computationalism acknowledge the variability of the presuppositions of action. They call this variability "belief revision". However, a part of the computationalist tradition is still connected to the idea that human action can be simulated by developing ever more complex programs and fixed instructions – programs and detailed instructions which can be implemented by a logical machine.

Toward the end of the twentieth century, criticisms against computationalism began to develop inside the very framework of cognitive science. A significant outcome of this criticism has been the rise of a new approach called *neurophenomenology* or *enaction*. According to this orientation, "perception is an act of interpretation" (Marsh 2010b, p. 115). "The world," it argues, "is not pregiven but enacted" in the light of a certain history (Varela et al. 1991, p. 200). Such an approach combines a philosophical attack against objectivism with the help of mathematical modeling. It assumes that the mind is a complex, self-organized system – an open and indeterministic system rather than a deterministic mechanism (see Petitot et al. 1999, pp. 6 ff.). As Marsh (2010b, pp. 115 ff.) and

Petitot (2002, pp. 9 ff.) show, this new orientation basically proposes an improved and more empirically corroborated version of Hayek's proto-connectionist psychology. Marsh's and Petitot's view was an indirect defense of the idea that an analogy exists between Gadamer's and Hayek's theory of consciousness. The *e-nactivists* explicitly maintain that, from a philosophical point of view, a non-objectivist and connectionist theory of knowledge, such as the one presented by Hayek in *The Sensory Order* (1952b), is in "the tradition that includes hermeneutics and phenomenology" (Winograd and Flores 1987, p. 9). They have underlined a point that Hayek did not. In the following sections I shall refer primarily to the lexicon and concepts employed by these authors.

Enactive connectionists such as Dreyfus, Maturana, Petitot and Varela draw on authors such as Edmund Husserl, Martin Heidegger, Gadamer and Maurice Merleau-Ponty to criticize the epistemological assumptions of computationalism (see Besnier 1993, pp. 731–732, 2005, pp. 83–84; Barthelemy et al. 1996; Gallagher and Zahavi 2008, pp. 28 ff.). According to them, computationalism was wrong, for the reasons offered by Lachmann. First, they argued, computationalism had to be rejected precisely because it was a form of objectivism. It does not consider "that knowledge is the result of an ongoing interpretation that emerges from our capacities of understanding" (Varela et al. 1991, p. 149). It is particularly problematic because it defends the idea that the meaning determining action "exists independently of the act of interpretation" (ibid.). Neurophenomenologists maintain that this "meaning ... is contextual, depending on the moment of the interpretation and the horizon brought to it by the interpreter" (Winograd and Flores 1987, p. 30; see also Marsh 2010b, pp. 116 ff.). They also highlighted that such a "horizon is the product of the history" (Winograd and Flores 1987). According to neurophenomenologists, it depends on the biological evolution and the personal experience of the individual, and this includes the interiorization of a cultural heritage. Cognition, they held, "cannot be properly understood without common sense, and that common sense is none other than our bodily and social history" (Varela et al. 1991, p. 150). They also maintain that common sense is linked strictly to a tacit dimension of knowledge, whose importance is crucial (see Johnson 1987, pp. 7 ff.; Dreyfus and Dreyfus 2000, pp. 101 ff.). For neurophenomenologists, action was based "upon acquired motor skills and the continuous use of ... background know-how" (Varela et al. 1991, p. 147). Consequently, they rejected the notion that action can be explained as the outcome of explicit rules, and argued that human "common-sense knowledge is difficult, perhaps impossible to package into explicit, propositional knowledge" (ibid., pp. 147–148).

Like Lachmann, these scholars also stressed that the computationalists – or, at least, some of them – do not understand the creative nature of human action. A program, enactivists say, can allow a computer to implement specific, clear and limited tasks; for example, playing chess. However, most human actions presuppose a completely different kind of intelligence. Computers play chess well because they work on the basis of a Cartesian rationality. Chess moves can be justified in precise and explicit terms deduced from a set of general principles. As phenomenological hermeneutics shows, however, very often an action does not fit this

Cartesian model of rationality. This is because acting presupposes the use of tacit knowledge and also because it usually also requires a process of continuous learning – a creative adaptation to unpredictable and infinitely variable events and situations (see Marsh 2010b, p. 116). The world of chess is finite and limited; the real world is not (see Varela 1989a, pp. 90 ff.). Many human actions are not based on the implementation of preestablished instructions and pure logical calculation, but require a creative restructuring of the interpretative horizon – the emergence of new categories of meaning. According to the enactivists, the “essence of intelligence is to act appropriately where there is no simple pre-definition of the problem or the space of states in which to search for a solution” (Winograd and Flores 1987, p. 98; see also Núñez and Freeman 1999).

2.7 The Circular Causality Between Consciousness and Experience in Gadamer’s Thought

Comparing Hayek’s cognitive psychology with Gadamer’s phenomenological and hermeneutical theory of consciousness is useful to show the philosophical implications of *The Sensory Order* (Hayek 1952b). Notably, it allows an improved understanding of Hayek’s epistemology of action as well as of the presuppositions of his methodological individualism.

Following Husserl, Gadamer assumed that the concept that knowledge is temporally variable interpretation is useful to understand the implicit presuppositions of the phenomenal world. In other words, for Gadamer, the concept of interpretation is the key to uncovering the presuppositions that inform our sensory perceptions.

For Gadamer, the first point that must be considered is that consciousness is based on interpretative abilities that are tacit – tacit in the sense that they cannot be fully articulated linguistically. Consider, for example, our perception of color. Colors are not features of the world itself. They do not exist independently from our way of categorizing reality. Colors result from a sort of meta-conscious interpretative process that literally builds a particular aspect of our phenomenal world. Evolutionary biology has showed that the way we perceive colors is linked to a hermeneutical horizon endowed with a specific historicity. The way our minds build colors depends on the biological history of our species. Flies see colors in a different way than we do. Because the process of making up the phenomenal world on the basis of a priori categories is a tacit process, we are able, for example, to differentiate red from green, but we cannot say how we are able to do it. Since we are endowed with “hermeneutical” abilities that cannot be expressed propositionally and are at the base of our consciousness, Gadamer maintained that the activity of mind cannot be reduced to explicit reasoning. According to Gadamer, it is first and foremost “intuition” (1977, p. 132; see also Marsh 2010a).

For Gadamer, the implicit or practical dimension of knowledge is based on skills that have been acquired through past experience, which includes cultural traditions.

The horizon constituting the human interpretative framework is largely composed of what Husserl later called the *lifeworld*, i.e. our “common sense” (Gadamer 1981 p. 153). The historicity of knowledge makes the idea of a mind without fore-understanding simply incoherent. Our consciousness, wrote Gadamer, “represents the pregiven basis of all experience” (2006, p. 247). It cannot be bypassed to achieve a neutral perspective, as objectivists believe. It is the only door to knowledge and it conditions our access to it – the way in which we experience the world.

Unlike the members of the Vienna Circle, Gadamer does not think that observation is neutral data acquisition with the mind as a *tabula rasa*: “Pure seeing and pure hearing are dogmatic abstractions that artificially reduce phenomena. Perception always includes meaning” (Gadamer 2006, p. 80). In Gadamer’s opinion, the fact that, for example, a precious stone appears to us as huge or beautiful cannot be explained away by assuming that it is endowed with absolute and given properties – objective properties that exist “out there” independently of humankind and that create human perception mechanically. As he stated, there “are no representative images of objects in consciousness, whose correspondence to things themselves it is the real problem of epistemology to guarantee” (Gadamer 2006, p. 131). The “image we have of things is rather in general the mode in which we are conscious of things themselves” (ibid.). Gadamer also maintained that, because our minds are full of patterns that are partly innate and partly acquired, they are also full of expectations. For example, if we see a cobra, we instinctively retreat, precisely because we have some expectations depending on our horizon, based on our *a priori* knowledge.

Criticizing the anti-historicity and objectivism of the Cartesian approach, Gadamer maintained that knowledge is not a construction “based on principles, but the furthering of an event that goes far back” (Gadamer 2006, p. xxiv). Moreover, he argued that knowledge is based on changing presuppositions (see Ricoeur 2007, pp. 23 ff.). To clarify this he considered the concept of *Erlebnis* or lived experience – a crucial concept in philosophical hermeneutics. This concept has two meanings. On the one hand, it signifies that knowledge is, in a sense, necessarily subjective and personal: “What is experienced is always what one has experienced oneself” (Gadamer 2006, p. 61). On the other hand, this notion highlights that immediate experience is based on past experience and will in turn be the presupposition that informs any future meanings we construct. So *Erlebnis* also means “the permanent content of what is experienced” (ibid., p. 61). “An experience is not ... just something that flows past quickly in the stream of conscious life” (ibid., p. 66). It is “not soon forgotten” (ibid., p. 67). It is part of a “unity of meaning” (ibid., p. 66). It is something that “immediately represents” a “whole”, i.e. the whole composed by the history leading up to it and the future knowledge that it will contribute to shaping (ibid., p. 70). That being so, Gadamer concluded that the significance of an experience is not temporally limited, but “infinite” (ibid.).

This process that creates human knowledge confronts us with new experiences that always contain surprises and fail to meet our expectations. In other words, it is based on the unexpected. The “birth of experience” is “an event over which no one

has control” (Gadamer 2006, p. 347). The acting individual inevitably finds out this basic truth (ibid., p. 351). The awareness of the unpredictable “is always to be acquired, and from it no one can be exempt” (ibid., p. 350). Over the course of his/her own life, a human being “becomes aware of his [*sic*] finiteness” (ibid., p. 351), understanding that he or she cannot control his/her environment and future events completely: in the “real experience ... are discovered the limits of the power and the self-knowledge of his [*sic*] planning reason” (ibid., p. 351). According to Gadamer (ibid., p. 346), a “fundamental openness of experience to new experience” implies a continuous restructuration of our interpretative horizon.

Gadamer also stressed that, because human knowledge is based on temporally variable a priori categories, there is a partial uniqueness of the individual interpretative presuppositions of experience. In his view, the partial uniqueness of these presuppositions depend on the non-coincidence between the histories of different people. In other words, he argued that, because two different individuals cannot have an identical past, they cannot share exactly the same horizon. Consequently, they cannot see the world precisely in the same way: “Everything that it is experienced is experienced by one-self, and part of its meaning is that it belongs to the unity of this self and thus contains an unmistakable and irreplaceable relation to the whole of this one life” (Gadamer 2006, p. 67).

2.8 Hayek on the Interaction Between Memory and the Sensory Order

While Hayek did not use a hermeneutical lexicon, his anti-objectivist proto-connectionism described the cognitive process in distinctly Gadamerian terms: “Every sensation must ... be regarded as an interpretation of an event in the light of the past experience of the individual or the species” (Hayek 1952b, p. 166). Like Gadamer, Hayek assumed that cognition presupposes a historical horizon, i.e. “a sort of accumulated knowledge” (ibid., p. 167). Mind is a biological and cultural memory and “consciousness” is a “product of experience” (ibid., p. 166; see also Nemo 1988, pp. 44 ff.). This horizon shapes human consciousness and is composed both of genetic a priori categories and acquired or learned Gestalt skills (see Fleetwood 1995, p. 28; Heritier 1997, p. 56 ff.; Butos and Koppl 2006, pp. 22–24).

Given that the cognitive process is linked to historical presuppositions, objectivism is wrong: the phenomenal world cannot be conceived as a representation, mirroring reality. In agreement with evolutionary epistemology (see Campbell 1974, pp. 412–463; Heritier 1998, pp. 46–47), Hayek assumed that the sensory order is built conjecturally and selectively. It does not show “the environment” in a complete and perfect manner, but only reproduces approximately “the kinds of events which the organism has met during its whole past” (Hayek 1952b, p. 115). Knowledge does not deal with essences, i.e. things in themselves. It is “abstract; it always selects certain features or aspects of a given situation” (ibid., p. 143). In

other words, knowledge is endowed with a “partial or incomplete character” (ibid., p. 144). Hayek (1952b, p. 7) also highlighted that, because of a strong link between history and perception, “much that we believe to know about the external world is, in fact, knowledge about ourselves”. The anti-essentialist nature of cognition also depends on its fallibility (see Besnier 2005, pp. 77–79; Butos and Koppl 2006, p. 18; Butos 2011, p. 326). Hayek thus developed a theoretical approach similar to those of Gadamer and Popper. In a sense, all “we know about the world is of the nature of theories and all ‘experience’ can do is to change these theories” (Hayek 1952b, p. 143).

In Hayek’s opinion, the existence of ultrasound – a sound that dogs, for example, can hear but humans cannot – demonstrates the selectivity and interpretative nature of the phenomenal world (see Hayek 1952b p. 3; see also Heritier 1998, pp. 31 ff.). Moreover, like Gadamer, Hayek stressed the existence of an intuitive or pre-theoretical cognitive activity. According to Hayek, humans’ direct perception of reality is tacitly shaped on the basis of a *know-how* accumulated along the way. The sensory world is built selectively “not by conscious choice or deliberate selection, but by a mechanism over which we do not exercise deliberate control” (Hayek 1973, p. 30; see also Nemo 1988, pp. 39 ff.; Fleetwood 1995, pp. 94 ff.; Smith 1997; Petitot 2002). Perception is “implicit ... interpretation” (Hayek 1952b, p. 143). Because of this, the sphere of mental phenomena is far more extensive than that of conscious phenomena and includes many events that are undoubtedly not conscious (ibid., p. 132). Explicit knowledge can be “compared to mountain tops rising above the clouds which, while alone visible, presuppose an invisible sub-structure” (ibid., p. 139).

Like the shifting horizon of the hermeneutists, Hayek’s sensory horizon is variable and temporally conditioned (see Van Gelder 1999, pp. 315–340; Varela 1999, pp. 341–406). Hayek shed light on this point by criticizing the theory of pure sensations, a psychological variant of objectivism. According to Hayek (1952b, p. 165), there are no pure sensations, depending either on a “direct communication of properties of the external objects”, or on the existence of “irreducible mental atoms or elements”. Any theory that affirms their existence does not understand that perception is “due to earlier experience” (Hayek 1952b, p. 165):

It is closely connected with the old belief that the sensory qualities constitute in some sense a reproduction of corresponding attributes of the objects of the external world, and with that mosaic theory of perceptions which conceives of all mental events as being built up from fixed “sensory” elements (p. 142).

On the contrary, however, all the aspects of sensory cognition are temporal and variable (see Nadeau 1997, pp. 5 ff.; Caldwell 2004, pp. 241 ff.). Hayek’s *The Sensory Order* (1952b) undermined the assumptions of the traditional psychologies “by destroying the conception of elementary and constant sensations as ultimate constituents of the world” (p. 177). This phenomenon “of the inconstancy of the sensory qualities” (ibid., p. 173) is not understood by the different forms of hyper-rationalism that do not accept the fact that the world is “imperfectly known” by humankind (Hayek 1973, p. 30). Because the human mind is a temporally

conditioned device, “what used to be called elementary qualities are its product rather than its material” (Hayek 1978, p. 38; see also Nadeau 1997, pp. 9 ff.).

According to Fuster (1995, p. 87), *The Sensory Order* is more relevant than earlier psychological orientations precisely because it assumes “that all perception – and not just a part – is a product of memory”. Hayek “carries to the extreme” one of “Helmholtz’s ... central notions” (ibid.). Therefore, Hayek has to be considered as “the first to postulate what is the core” of contemporary theories that regard the mind as a self-organizing and dynamic system” (Fuster 1995, p. 87; 1997, p. 451; see also Butois 2010, pp. 2–5). *The Sensory Order* explains mental activity in terms of a circular causality in the sense that it assumes that “perception [is] the source of memory and [is] the product of memory” (Hayek 1952b). Hayek and Gadamer agreed that sensory knowledge is created by the memory; moreover, it affects memory and partly changes it on the basis of a loop-back mechanism. The sensory order “is not a stable, but a variable order” (ibid., p. 19). The “structure of connexions in the nervous system is modified by every new action exercised upon it by the external world” (ibid., p. 123). Therefore the way experience is categorized “is subject to continuous although very gradual change” (ibid., p. 110; see also Agonito 1975, p. 165, n. 16; Gray 1986; Smith 1997).

Like the hermeneutical circle, this process is based on unexpected novelties and disappointed expectations (see Hayek 1952b, p. 138; see also Nemo 1988, pp. 50–52): “Man is not and never will be the master of his fate” (Hayek 1979, p. 176). Precisely by virtue of this fact, “his [*sic*] very reason always progresses by leading him [*sic*] into the unknown and unforeseen where he [*sic*] learns new things” (ibid.). Hayek’s proto-enactivism is clearly incompatible with the mind–computer analogy of the computationalist paradigm. In his opinion, action depends neither on the representation of a given reality, nor on the mechanical implementation of an invariable set of limited instructions predetermined by a program. According to Hayek, a dynamic system such as the nervous system is a temporally conditioned “hermeneutic device” (Érdi 1996, p. 187). Because of its nature, it

will, as a result of its own operations, continuously change its structure and alter the range of operation of which it is capable. It will scarcely ever respond twice in exactly the same manner to the same external conditions. And it will as a result of “experience” acquire the capacity of performing entirely new actions (Hayek 1952b, p. 122).

2.9 The Concept of a Shifting Horizon Within the Theory of Distributed Knowledge

One of the most interesting aspects of Hayek’s work is that he merged an interpretative approach to the social sciences with a theory of distributed knowledge. The Gadamerian theory of consciousness can be used to clarify and enrich Hayek’s

theory of distributed knowledge. Understanding the connections between interpretation and distributed knowledge is a further step toward a better understanding of human action.

Like Gadamer, Hayek considered the role of expectations in cognition to be preeminent, because the individual was constantly striving to anticipate the future using his/her dynamic memory (see Morrison 1978, pp. 182–198; Butos and McQuade 2005, p. 339; Butos and Koppl 2006, pp. 28–30). The sensory order “functions as an apparatus of orientation by representing both the actual state of the environment and the changes to be expected in that environment” (Hayek 1952b, p. 118). To put it another way, “each part and the whole of the representation of the existing environment derive their significance from the penumbra of possible consequences attaching to them” (pp. 118–119).

By analyzing this aspect of Hayek’s work, Fuster (2003, p. 84) emphasized that Hayek conceived perception in distinctly Popperian and Gadamerian terms, i.e. as “the continuous testing by the senses of educated hypotheses about the world around us”. Hence, Fuster pointed out “the essentially active character” of the Hayekian perception based on “a concept far removed from the passive, receptive view of that faculty that Locke ... held, echoing the Stoics of ancient Greece, i.e. the theory of the ‘tabula rasa’” (ibid.; see also Butos and Koppl 2006, p. 43).

As Rizzo (2000, pp. 175–180) argued, the idea of the temporality of consciousness as intended by the phenomenological tradition – i.e. the idea of the variability of interpretation and expectations – can be considered to be a crucial epistemological assumption of the Austrian School of economics (see also Zanotti 2007). Before Hayek – who analyzed this idea from a neurophysiological standpoint – it was strongly defended by Ludwig von Mises, Hayek’s mentor. In his book *Human Action*, von Mises (1998, p. 100) quotes Husserl in this regard. By dealing with issues related to the methodology of economics, he developed a criticism of the mechanistic assumptions of Léon Walras’s and Vilfredo Pareto’s equilibrium theory. Mises (ibid., p. 99) stressed, among other things, that, since this theory conceives of action as functional to an equilibrium intended as “logical simultaneity”, it neglects the temporality of human decision-making. According to him, individual plans are part of a dynamic and non-deterministic process. He (ibid. p. 100) maintained that, since Walras’s and Pareto’s approach assumes (unrealistically) the succession of discrete instants of logical time in which different states of equilibrium are realized, it does not allow us to grasp the fact that, for the acting individual, “there is between the past and the future a real extended present”. This means, as Rizzo (2000, p. 179) explained, that subjective time is a continuum; the present “encompasses what from the instantaneous perspective belongs to the recent past”. As Mises (2008, p. 101) wrote, the “present encloses as much of the time passed away as is still actual, i.e. of importance for acting”. Rizzo (2000) underlined the point that for Mises there was what the phenomenologists call a “protention” of the present towards the future, i.e. an anticipation of what is going to happen based on a knowledge of past experience:

For the past to prolong itself into the present consciousness of the actor obviously requires memory. So the real extended present must embody memory of the past. But since all action is future oriented, i.e. aims at improving the future state of affairs beyond what it would be without the action, the extended present must also encompass expectation (pp. 179–180; see also O'Driscoll and Rizzo 1995, pp. 52 ff.; Butos 2011, pp. 311 ff.).

As has already been pointed out, according to Gadamer (2006, p. 59), the concept of the temporality of consciousness and the defense of the “absolute continuity of the psychic” against the objectivistic conception of “life” are strictly related to another issue (see also Ebeling 1986, pp. 30 ff.). Gadamer assumed that, because the individual presuppositions of knowledge are historical, and because different individual histories are not identical, every consciousness is endowed with characteristics that are partly unique. Hayek's cognitive psychology is consistent with this idea. A complete and specular correspondence of the interpretative sensory presuppositions would be impossible; it “would presuppose not only an identical history of the different individuals but also complete identity of their anatomical structure” (Hayek 1952b, p. 110). The mere fact that, for each individual, mental categories “will be subject to constant changes practically precludes the possibility that at any moment” the sensory orders “of two individuals should be completely identical” (*ibid.*).

As Cubeddu (1995, pp. 47–63) pointed out, this view matches the assumptions of Austrian marginalism, i.e. the subjectivism of values. Hayek defended the subjectivism of values from a neurophysiological viewpoint, for two reasons. First, Hayek's cognitive psychology supported the epistemological presupposition of marginalist economics that value is not an objective feature of things, but a mental construct. Second, it explained its individual variability. It clarified why value-choice is based, as the marginalists maintain, on interpretative presuppositions that change with the individual.

Moreover, understanding Hayek's theory of the variability of the sensory horizon clarifies his idea that knowledge is socially distributed. As is well known, Hayek contended that the information linked to “circumstances of the fleeting moment” (Hayek 1992, p. 80) and known to different individuals cannot be centralized (see also Butos and McQuade 2005, p. 338; Marsh and Onof 2008, pp. 140–144). The dispersion of knowledge in society depends not only on the continuous and unpredictable change in the situations in which human action takes place, but also depends on another relevant factor: each temporary circumstance is interpreted by the individual who knows it – it is interpreted in the light of a horizon (i.e. of a standpoint) that is unique and in turn variable. Consequently, the information that cannot be centralized or catalogued is not relative to a pre-given environment, but is related to a hermeneutical dimension. The social distribution of knowledge depends on two inextricably linked factors: (i) the existence of circumstantial knowledge tied to the fleeting moment; and (ii) the difference and variability of the mental presuppositions on which the interpretation of circumstantial knowledge is based. The distribution of knowledge is created by both the change of local circumstances and the change of the interpretative presuppositions of knowledge. Moreover, the change in the interpretative presuppositions of

knowledge is connected to the continuous and unpredictable change of the circumstances: because of the interaction between memory and experience, the continuous change in the circumstances affects mental categories (see Rizzello 1999; Di Iorio 2010, pp. 196–197).

2.10 The Unity of Immediate Experience

The thesis that consciousness is “temporality” is linked firmly to the issue of holistic perception. Following Paul Natorp, Edmund Husserl and Henri Bergson, Gadamer (2006, p. 59) criticized what he called the “rationalist psychology”, an “objectivizing” approach which denies that perceptions are indivisible “wholes”. This approach assumes that the “undifferentiated unity” of experience can be “differentiated” rationally and reduced to some independent, basic and invariable components of knowledge (ibid.). Such components have no historical nature and do not depend on interpretative processes. Moreover, they are described as having “concreteness” (ibid.) to distinguish them from the “abstractness” of the decomposable unities from which they are made.

In contrast, Gadamer (2006, p. 59) argued that perception is precisely a whole – a whole in the sense of Gestalt psychology, i.e. “an indecomposable relationship”. Because the phenomenal world is based on “a mode in which every element is representative of the whole”, it is “organization” (ibid.). We can compare “the inner interpretation of all elements in consciousness to the way all the notes intermingle when we listen to a melody” (ibid.). Every aspect of knowledge is precisely characterized by “an organic relationship” between “part and whole” (ibid.). The “unity of experience stands in an immediate relationship to the whole” (ibid.). This relationship is a relationship “to the totality of life” (ibid.) because it is completely built on the basis of our progressing history.

On this issue, Hayek’s and Gadamer’s views were also similar. Hayek criticized objectivistic psychology because it was “atomistic” (see De Vecchi 2003, p. 138). As Hayek explained, this means that, in agreement with mechanistic physics, objectivistic psychology assumed the perceptive structures to be decomposable into elementary sensations corresponding to basic physical components, which can be considered to be the ultimate essences of the world (see Petitot 2009, pp. 101–102). For Hayek, this psychology made two mistakes. First, it denied the Kantian nature of scientific knowledge. On the basis of the assumptions of the mechanism, it considered the contrast between the way physics described things and the way human beings perceived them. It assumed that this contrast is a contrast between “reality” – in the sense of the representation of the world as it is in itself – and “appearance” (Hayek 1952b, p. 4; see also Bradley 2008). Following an anti-essentialist perspective, Hayek (1952b, p. 5) stressed that this positivistic orientation commits the error in that it reserves “the term ‘reality’ to something which by definition we can never really know”.

Hayek made the point that, in addition to not understanding the *a priori* nature of the physical description of the world, objectivistic psychology neglects the unity of perception, i.e. the fact that perception is always a perception of irreducible “wholes”. Since this unity exists, perception cannot be considered to be a two-way relationship between alleged objective physical components of the external world and alleged elementary sensory qualities (see Nemo 1988, pp. 46 ff.). To understand that perception is not implied mechanically by the physical structure of the external world, consider, for example, color perception. According to objectivistic psychology, color is an effect of the wavelength of the light that is reflected by objects. As enactivists stress, this is untrue: the perception of colors is largely independent of the light wavelength. It results from the “organization of the field”, i.e. from a holistic effect. The perception of a color can change depending on the background, though the physical features of the object reflecting the color do not change. As a color optical illusion shows, if I put grey paper on a red background, I see greenish instead of grey (see Varela 1989a, pp. 103–111; see also Thompson et al. 1992, pp. 1 ff.; Petitot 2003, pp. 107 ff.).

The “immediate data of consciousness”, Hayek (1952b, p. 153) wrote, “are not ... built up in a mosaic fashion from elementary sensations”, i.e. from sensations corresponding to objective properties or the external world: “We perceive directly ... configurations (gestalts)” (ibid.). Consequently, it makes no sense to state that perceptions possess attributes that can be “derived from the ... attributes of the separate parts” (ibid., p. 76). The “similarities and differences between the experienced sensory qualities do not correspond strictly to the differences and similarities between the physical attributes of the stimuli” (ibid., p. 13).

It is precisely “the existence of an order of sensory qualities and not a reproduction of qualities existing outside the perceiving mind which is the basic problem raised by” cognitive psychology (ibid., p. 7). Like the Gestalt school, Hayek remarked, on the one hand, that physically identical individual stimuli can “evoke different sensory qualities” and, on the other, that “groups of physically different ... stimuli are able to evoke the same sensory quality” (ibid., p. 143; see also De Vecchi 2003). To make this point clear, Hayek invoked classic examples of Gestalt perception. A similar melody, he pointed out, can be “obtained by using different tones” and similar shapes or figures can be “characterized by different sizes and colours” (ibid.; see also Hayek 1952b, p. 13).

Hayek, however, partly disagreed with the Gestalt school. In his opinion, most of this school’s contributions were somewhat unsatisfactory, because they seemed to imply that the holistic approach had to be used only to explain “the more complex sensory phenomena” (Hayek 1952b, p. 77). In other words, for Hayek, the originators of the Gestalt school are wrong, because they tend to consider the “organization of the field” as “additional to the qualities of ... atomistic sensations” (ibid.). In this regard, their view does not represent a radical revolution contra the approach of traditional objectivistic psychology. As has been pointed out already, in Hayek’s opinion, the fact that “physically different stimuli produce similar sensory qualities” and that “physically similar stimuli ... produce different sensations” does not pertain only to the more abstract perceptive phenomena (ibid., p. 13). It is, he

wrote, “perhaps most conspicuous in connexion with the perception of wholes”, but “it is no less present or less important where more simple or elementary sensations are concerned” (ibid., p. 13). One of the most groundbreaking aspects of Hayek’s contribution to psychology is the idea that the distinction between pure sensations reflecting concrete or objective attributes of reality, and “secondary” and abstract cognitive structures “being derived” from these concrete data makes no sense (ibid., p. 78). According to Hayek (ibid., p. 77), “the whole system of the sensory qualities must ... be regarded as one organized field”. This means that every aspect of knowledge is the outcome of an interpretative holistic process linked to a certain history or cumulative experience.

2.11 Why Interpretation Means Autonomy

A crucial implication of the hermeneutical theory of knowledge is the indeterminism of human action: “Life is defined by the fact that what is alive differentiates itself from the world in which it lives and to which it remains connected, and preserves itself in this differentiation” (Gadamer 2006, pp. 243–244). In other words, human beings can express a form of “autonomy” from contextual influences. Since humans are interpreters, action cannot be explained as passive adaptation to objective and given properties of the environment, as positivistic theories of cognition assume. Human behavior is endowed with “autonomy” because it is not controlled or predetermined by external factors – external factors being considered to be “essences” (or things in themselves) that affect it as such. Human beings’ “relationship to the world is characterized by *freedom from environment*” (ibid., p. 441); and the way the environment is known is as a “free expression of an individual being” (ibid., p. 187). The environment can influence thoughts and actions exclusively as meaning, i.e. in a broadly Kantian way. Because thoughts and action cannot be imposed mechanically by external factors that can be assumed to be things in themselves, there is always interpretation and autonomy. The hermeneutical horizon (i.e. the standpoint) matters. This hermeneutical freedom has nothing to do with solipsism, because Gadamer did not criticize realism as such, but only naïve realism. The dichotomy between life and world is not absolute, because behavior is linked to the reality of the world. The world exists outside human beings, but it influences them through the way it is interpreted:

What is alive preserves itself by drawing into itself everything that is outside it. Everything that is alive nourishes itself on what is alien to it. The fundamental fact of being alive is assimilation. Differentiation, then, is at the same time non-differentiation. The alien is appropriated (Gadamer 2006, p. 244).

Hermeneutically appropriated, I would add.

Gadamer’s theory of the actor’s interpretative freedom was also shared by Hayek, an implication of the Austrian thinker’s anti-objectivist connectionism. The relationship between a Hayekian-like theory of mind and the concept of

autonomy has been analyzed carefully by neuro-phenomenologists. Autonomy is “a fundamental characteristic” of the human mind, intended as a complex and dynamic biological system (Thompson 2007, p. 15). It exists because action is not mechanically implied by objective external factors, but depends on the co-emergence of consciousness and the world (see Besnier 2005, p. 84). The human mind is not an apparatus mirroring nature, but rather an interpretative system that is able “to enact a world”, i.e. of building it in the light of a specific history (Varela et al. 1991, p. 151). This enacted world is “built”, not in the sense that it is an idealistic and imaginary construction, but in the sense that it is a selective and fallible construction of the hermeneutical mind.

Since a logical machine functioning as a computer does adapt itself to “a picture of the relevant surroundings” (Varela 1979, p. xvi), the cause of its behavior is outside of it. It works according to a principle that can be called “allonomy or external law” (ibid., p. xi). The mind is, by contrast, an interpretative apparatus; autonomy “means, literally, self-law” (ibid.). It is the reverse of control, predetermination, mechanical adaptation, programming and instruction. Rather, it connotes “generation, internal regulation, assertion of one’s own identity: definition from inside” (ibid., p. xii). Consequently, the cause of the behavior of a system endowed with autonomy is inside it. It depends on its interpretative skills (see Maturana and Varela 1980; Thompson 2007, pp. 43–44).

Hayek defended this stance decades before the enactivists did. It makes no sense to consider sensory knowledge as “a sort of schematic picture of the environment” (Hayek 1952b p. 131). What the mind “provides is ... a theory of how the world works rather than a picture of it” (ibid.). Consequently, human behavior must not be regarded as being caused mechanically by the environment. A “mechanism or mechanical process ... is essentially passive, in the sense that which of the different operations of which it is capable it will perform will depend exclusively on the external circumstances” (ibid., p. 122).

In contrast, a dynamic system developing interpretations as the human mind does “will show opposite characteristics” (ibid., p. 122). In other words, its “actions will appear self-adaptive and purposive, and it will in general be ‘active’ in the sense that what at any given moment will determine the character of its operation will be the pre-existing state of its internal processes as much as the external influences acting on it” (ibid., pp. 122–123; see also Buto and Koppl 2006, pp. 20–22).

2.12 The Emergence of the Sensory Order by Self-organization

One of the pioneering aspects of Hayek’s cognitive psychology is that it merges the hermeneutical concept of autonomy with an analysis of the mind as a self-organizing and “complex dynamic system” (Hayek 1952b, p. 109; see also

Smith 1997, pp. 9 ff.; Butos and McQuade 2005, pp. 336–338). In other words, Hayek connected a philosophical assumption to an “explanation of the principle” that governs the emergence of consciousness from a neurophysiological viewpoint (Hayek 1952b, p. 182). In here lies the core of his proto-connectionist and anti-objectivist conception of cognition. Let us try to explain in very general terms what self-organization means within Hayek’s theory of mind.

To this end, it may be useful to reinterpret *The Sensory Order* in the light of the criticism the enactivists have developed against the mind–computer analogy. Though Hayek elaborated his cognitive psychology before the invention of computers, his proto-connectionist approach is clearly incompatible with this analogy, while it is consistent with the enactivist concept of the self-organizing mind (see Marsh 2010a, b). One of the reasons why the Hayekian mind does not work like a computer is that it is not endowed with a central processing unit (CPU) – a unit that directs and controls all mental components by calculation and according to the explicit rules of a program. There was no such planning device in the Hayekian mind, establishing which outputs have to be induced by objective information, i.e. by inputs understood as given data. According to Hayek, the mind is made up of billions of components – neurons – whose activity is not pre-programmed but self-determined. The neurons do not follow specific instructions, but work in a sense in an independent manner. They build up the perceptive categorizations by connecting spontaneously to each other. They create complex chains of impulses that correspond to the different kinds of “patterns” humans are able to recognize. This self-organized cooperation between neurons is made possible because their activity is governed by general and abstract rules (Hayek 1952b, p. 53; see also Hebb 1949; Smith 1997). As Varela (1979, p. 88) stressed, because of these rules, “there is no need for a central processing unit to guide the entire operation”. Each “component operates only in its local environment, so that there is a global cooperation that spontaneously emerges” (ibid., p. 88; see also Weimer 1982, p. 245; Butos and McQuade 2005, p. 338; Marsh and Onof 2008, pp. 140 ff.).

This theory of mind as self-organized is closely linked to the concept of emergence. When connected appropriately, the neurons “have interesting global properties” (Varela et al. 1991 p. 87). Perceptions are emergent phenomena (see also Butos and Koppl 2006, p. 32). According to Hayek (1952b, p. 47), the theory “of structural proprieties as distinct from the properties of the elements” is not only useful to understand the Gestalt nature of cognition; it “is directly applicable” to the explanation of the functioning of the human nervous system. Hayek maintained that our perceptions are indivisible “unities” because they emerge in that way. His idea that “the whole system of the sensory qualities must ... be regarded as one organized field” (ibid., p. 77) was rooted in this theory of neuronal self-organization (see also Petitot 2009). Let us examine this idea more closely.

Hayek’s criticism of the objectivist assumptions of the theory of pure sensations was related to his analysis of consciousness in terms of emergence. According to the theory of pure sensations, our sensory receptors imply the development of chains of impulses which convey bits of basic objective information. In contrast to this, Hayek’s view was that every aspect of knowledge is interpretation:

“The sensory qualities are not in some manner originally attached to, or an original attribute of, the individual physiological impulses” (Hayek 1952b, p. 53). Though the impulses are triggered by external stimuli that act on the receptors, taken individually, they do not incorporate any specific information. A single impulse does not correspond to any “essential property” of the world. What is crucial “is the position of the individual impulse or group of impulses in the whole system” of the neuronal “connections” (ibid.). It is exclusively a structured unity that influences cognition. In other words, different perceptions do not require different kinds of impulses, but rather different systems of interconnection and different emergent properties. There is no treatment of objective information within the mind.

As Hayek stressed, this explanation of consciousness in terms of emergence undermines attempts to eliminate the mental qualities of a certain kind of monism. This is because it is incompatible with the materialist conceptions of the mind, which are based on the reductionist approach of mechanistic physics (see Petitot 2009, pp. 101–102). Since perception depends on dynamic networks generating aggregate properties, perceptive qualities are irreducible and cannot be located precisely in the brain (though there are limited forms of localization). According to Hayek (1952b, p. 148), different mental functions are not implemented by different “parts of the cortex”. For example, the capacity of Gestalt recognition of a particular pattern – let us say a dog – is not concentrated in a particular region. Rather, it is a distributed and emergent function, resulting from the state of all the components of the nervous system. When we see a dog, a spontaneous cooperation builds a particular structure of connections corresponding to a typical emergent property. This theory is confirmed by the fact that the destruction of a limited part of the brain leads “to some weakening of most or all mental functions, rather than to the extinctions of some particular capacities” (ibid.).

2.13 A Criticism of Behaviorism via Complexity Theory

Both Hayek and Gadamer criticized the behavioristic thesis which states that action is perfectly predicable, a thesis based on positivistic and mechanistic prejudices that still survive residually within the computationalist paradigm of cognitive science (see Costall 2004; Gallagher and Zahavi 2008, pp. 3–4). The original version of behaviorism assumes that action is explainable on the basis of a monocausal schema: it presupposes a single stimulus, meant as a neutral datum, triggering a specific and forecastable effect. The idea of the perfect predictability of action is incompatible with the self-organizing mind. Hayek criticized this idea for three reasons.

The first is that perception never depends on a single stimulus, but is always linked to groups of stimuli (Hayek 1952b pp. 25 ff.). The second reason is that the use of monocausal schema of explanation is incompatible with the logic of self-organization. Consider, for example, the emergence of visual perception. According to Hayek, it requires, among other things, that a comparatively small part

of the many billions of components of the nervous system – namely some components located in the retina functioning as a receptor of the visual stimuli – are able to react to certain perturbations and change their state. In addition, visual perception also requires that, as a consequence of the activity of receptors, a much larger number of other components, part of the rest of the nervous system, change their state in turn. Only in this way can the chains of connections be formed that allow the emergence of perceptive categorizations. Since the activity of every component is self-determined and a global cooperation emerges spontaneously, perception is a function of what the different components of the system do. It is not the product of a single cause, but rather a global, distributed effect. To this it must be added that within the nervous system there is a continual interaction between the local and the global. By virtue of a circular causality, the whole influences the parts and vice versa. Moreover, the mind is also characterized by an interaction between several sub-systems and the whole (see Hayek 1952b, pp. 37 ff.; see also Varela 1979 pp. 163 ff.).

The third reason Hayek provided against the deterministic schema posited by behaviorism was that the human mind is a very open system. Action depends on interpretation, and interpretation is temporally conditioned. The way in which humans interpret the world is not based on static presuppositions, but on dynamic ones. The mind is an open system precisely because its interpretative categories are constantly influenced and modified by “perturbations” coming from outside. These “perturbations” affect the way in which the nervous system categorizes future experiences by changing its interpretative horizon. This makes prediction problematic. The manner in which neurons become interconnected, enabling the perception of reality, is partly and continuously modified over the lifetime of “the individual by a kind of uninterrupted “learning” process (Hayek 1952b, p. 53).

Perfect and detailed scientific previsions are impossible for very open systems such as human mind. They need closed systems because they require a strict application of the *ceteris paribus* clause. In the case of the mind, this is impossible because there is a continuous and unpredictable change in the initial conditions of the explanation. This depends both on the influences deriving from the outside, which affect the mental categories, and on the operative independence of the neurons, which modify their state autonomously and constantly.

An analogy exists between Hayek’s criticism of a centralized economy and his criticism of behaviorism. Via his paradigm of distributed knowledge, the common point is the idea of complexity, which is intimately bound up with the concept of an open system (see Di Nuoscio 2006). Hayek defines both mind and market as complex systems. A complex system is a highly open system based on the self-organized interaction between extremely numerous components. Its behavior is indeterministic – in the sense of being barely predictable – because, as a result of the way the system works, its functioning is affected by the continuous and unpredictable change in the initial conditions of the explanation – a change that makes a strict application of the *ceteris paribus* clause impossible (see Dupuy 1990; Petitot 2002; Di Nuoscio 2006; Caldwell 2009). Hayek was one of the originators of the complexity studies and analyses both mind and market in terms of complex

systems, but curiously he did not provide a good definition of the concept of “complexity”. His theory of complexity appears in an implicit manner in his writings on the mind and the market. An explanation Hayek did proffer argued that complexity depends on a high number of variables that determine the behavior of certain systems (see Hayek 1967). This definition neglects to take into account a crucial point stressed by Hayek himself to criticize both behaviorism and the planned economy: the problem of the constant and unpredictable change of the initial conditions of the explanation that lies at the core of the theory of complex systems, i.e. the problem of the extreme openness of these systems (Hayek 1952b, pp. 185 ff.; 1967, pp. 55 ff.; see also Nadeau 2001b, pp. 67 ff.; Caldwell 2004, p. 363; Di Nuoscio 2006, pp. 46–48; Marsh 2010b, pp. 140–141). The point is that even systems made up of a large number of variables can be perfectly predictable. They are so if two conditions are met: their predictability depends both on the nature of the laws that can be employed⁵; and on the possibility of considering these systems, at least in the short term, as closed systems (see Di Nuoscio, p. 47).

2.14 Organizational Closure

As the enactivists have shown, the self-organizing mind as intended by Hayek – who defends the hermeneutical freedom of the individual from the environment and the indeterminism of action – implies a paradox. It links the idea that the nervous system is an extremely open system with the thesis that this system is based on a sort of “organizational closure” (Varela 1979, p. 50). “Organizational closure” means that, because of the logic governing a Hayek-like connectionist system – a logic related to its phylogenetic and ontogenetic history – the activities of this system depend more on its internal organizational processes than on external events (Varela 1989b, pp. 216–219; see also Maturana and Varela 1980, pp. xii ff.). A “complementarity” or “coupling” exists between the system and its environment, but the perturbations coming from the latter “do not determine what happens in the nervous system” (Winograd and Flores 1987, p. 42; see also Varela 1989b, pp. 190–193). As a consequence, the relationship between context and action is very different from what is assumed in the behaviorist schema. Because of the principle of self-organization, what matters is “the interactions within the system as a whole, not ... the structure of perturbations” (Varela 1979, p. 42). As mentioned earlier, both the concepts of monocausality (according to which a single external cause implies a single predictable effect) and allonomy (according to which a pre-given reality determines a specular representation within the mind and is the ultimate cause of the phenomenal world) cannot be applied to explain the mind. This being so, the cause of perception is more inside human beings than outside of them (see Varela 1979, pp. 211 ff., 1989b, pp. 209–224; Varela et al. 1991, pp. 93 ff.).

⁵These laws must not be probabilistic, but necessary (see Chap. 6).

As paradoxical as that sounds, what happens outside the nervous system influences only in a very marginal way the human construction of the phenomenal world (see Varela 1989b, pp. 150 ff.). One reason for this is that among the infinite events happening outside this system, only relatively few of them represent stimuli for humans. According to Hayek, the truth is that the system establishes which aspects of the environment can affect it, and how they can influence its outcomes. To quote Maturana and Varela (1988, p. 142), it “specifies a realm of perturbations and maintains its organization owing to the changes of state that these perturbations trigger in it” (see also Thompson 2007, pp. 45–46).

A self-organized system such as the human mind is characterized by the fact that it actively employs the novelties that appear continuously and unpredictably in its environment to constantly self-reprogram itself and generate a “self-determined behavior” (Varela 1979, p. 170). Its outcomes depend neither on a program introduced from the outside and mechanically implemented, nor on environmental factors. In other words, the human mind is a device that is the “cause of itself” (Dupuy 1990). Understanding its organizational closure is relevant to seeing more clearly why Hayek’s anti-objectivist connectionism supports, from a neurobiological standpoint, Gadamer’s hermeneutical criticism of the mechanistic theories of action, including different kinds of materialism and socio-historical determinism. In other words, it is useful to grasp his arguments fully in favor of “human freedom”, the crucial pillar to the interpretative approach of methodological individualism (see Boettke 1990, pp. 36 ff.; Heritier 1997, pp. 67–78; Caldwell 2004, p. 247, 2007, p. 260; Butos and Koppl 2006, p. 22, 2008, p. 38, 2010; Di Iorio 2009, 2010, pp. 179 ff.; see also Boudon and Bourricaud 1990).

2.15 Historical Finitude and Anti-foundationalism

Gadamer’s theory of interpretation rejects foundationalism, as it does methodological fallibilism. As Popper (2002, pp. 3–27) underlined, foundationalism is a particular aspect of epistemologies that deny the uncertainty and selective structure of knowledge. In other words, it is part of epistemologies which argue that we “can intuit or perceive the essence or the true nature of a thing” (ibid., p. 16). Foundationalism is intended to resolve the infinite regression problem in epistemology. According to foundationalism, beliefs are justified based on basic, certain and invariable beliefs that do not need support from other beliefs because they are self-evident. Truth, meant as absolute truth, is rooted in these foundational beliefs from which all the other beliefs can be explained by inference (see Boniolo 1990, pp. 40 ff.; Antiseri 2010, pp. 45 ff.). Human reason is assumed to be able to grasp and know in detailed and clear terms the ultimate and invariable ground “of all forms of knowledge” (Wachterhauser 2002, p. 69).

While a foundationalist approach can meaningfully be defended in fields such as logic and mathematics, in other fields it cannot. Regarding empirical science and ethics in particular, foundationalist standpoints look weak. This point was stressed

by both Popper and Gadamer. Let us first consider empirical science: Popper and Gadamer agreed that, within this field, foundationalism is rooted historically in two main variants. Curiously, these variants have often been *wrongly* considered to be antithetical to each other. Both are expressions of what Gadamer calls “the Method”, i.e. scientism. One of the two variants is Francis Bacon’s (1561–1626) empiricism. According to this, the “ultimate source of all knowledge was observation” (Popper 2002, p. 4). Bacon thought that the foundational bricks of scientific knowledge could be acquired through sense data. In other words, he believed that experience provided the basic and absolutely certain beliefs that justify all other beliefs. The other variant of foundationalism is René Descartes’ (1596–1650) rationalism or intellectualism. According to this position, the indisputable source of the foundational self-evident truths “was the intellectual intuition of clear and distinct ideas” (ibid.).

Popper argued that both of these variants of foundationalism are incompatible with the idea of human fallibility. Except in fields such as logic and mathematics, it is impossible to assume the existence of indisputable and absolute truths. Observation cannot imply certainty. It is the same for intellectual intuition: “Intellectual intuition and imagination are most important, but they are not reliable: they may show us things very clearly, and yet they may mislead us” (Popper 2002 p. 37). Moreover, Popper pointed out that the idea that there is an exclusive and privileged source of knowledge defended by both empiricism and rationalism is equally mistaken. This is because the way human beings acquire knowledge can be very different. Sometimes the source can be a direct observation, whereas at other times it can be something else, such as a post on an internet blog or the discovery of an inconsistency in a scientific article. Popper (2002, p. 7) also maintains that both Bacon’s and Descartes’ variants of foundationalism are part of an “optimistic epistemology”. At the roots of the teaching of these thinkers, there is “the doctrine that truth is manifest” (ibid., p. 8). This means that “truth, if it does not reveal itself, has only to be unveiled or discovered. Once this is done, there is no need for further argument” (ibid., p. 9). For both of these philosophers, errors depend on “our sinful refusal to see the manifest truth”; or on the fact that “our minds harbour prejudices inculcated by education and tradition”, or on “other evil influences which have perverted our originally pure and innocent minds” (ibid.). According to Popper (ibid., p. 11), the “theory that truth is manifest ... is the basis of almost every kind of fanaticism”. It leads to misleading conclusions such as: “only the most depraved wickedness can refuse to see the manifest truth; only those who have reason to fear truth conspire to suppress it” (ibid.).

In Popper’s opinion, both Bacon’s and Descartes’ variants of foundationalism were rooted in ancient Greek philosophy, namely in Plato’s essentialism. Plato maintained that, to understand the essence or nature of things, i.e. the absolute truth about things, it was necessary to remember or recover a kind of forgotten knowledge that the human soul “possessed in its pre-natal state of omniscience” – a knowledge about “the unchanging world of eternal reality” (ibid., pp. 15–16). Consequently, Plato upheld that it was necessary “to destroy prejudices, false beliefs which are often traditional or fashionable beliefs” (ibid., pp. 16–17).

According to Popper (*ibid.*, pp. 17–19), this idea – the idea that people need to purge their minds of *tradition* or *prejudices* in order to grasp absolute certain truths – contains the germs of both Descartes’ intellectualism and Bacon’s inductivism. In spite of their differences, Descartes and Bacon denied that knowledge must necessarily be based on an interpretative horizon or a selective standpoint, a standpoint that is the product of history and changes because of human fallibility and shifting analytical perspectives.

As Gadamer (2006, p. 303) argued, human beings are limited by a “historical finitude”; a “closed horizon is an abstraction” (*ibid.*, p. 302). Human life is inevitably characterized by a “historical movement” (*ibid.*, p. 303). It “is never absolutely bound to any one standpoint, and hence can never have a truly closed horizon” (*ibid.*, p. 303). The human horizon “is, rather, something into which we move and that moves with us” (*ibid.*). From this fact it follows that “others after us” will see things otherwise – they “will understand in a different way” (*ibid.*, p. 366). Given the temporality of our knowledge, “all dogmatism, which proceeds from the soaring desires of the human heart, reaches an absolute barrier” (*ibid.*, p. 351). Both foundationalism and anti-fallibilism in general are afflicted with “historical short-sightedness” (Gadamer 2006, p. 369; see also Lawn 2006, pp. 123–124).

Gadamer equally stressed that foundationalism cannot be accepted because it does not take into account that our basic beliefs are linked indissolubly to a set of intuitive and tacit skills. Because it is impossible to make perfectly explicit all implicit knowledge, the basic pillars of science cannot be explained in a clear and detailed way. The tacit presuppositions of our consciousness can neither be completely articulated, nor justified as *more geometrico*, i.e. in a geometrical manner (see Gadamer 1981, p. 1 ff.). They are composed of “practical” skills rather than logical and theoretical ones (Gadamer 2006, p. 19; see also Volpi 2003). We constantly use a “kind of knowledge” that “lies outside the rational concept of knowledge”, i.e. outside the Cartesian notion of it (Gadamer 2006, p. 19). In Gadamer’s opinion, the basic presuppositions of scientific reasoning are necessarily vague (see Daniau and Gens 2003, pp. 9–11).

As I indicated earlier, Gadamer and Popper also criticized ethical foundationalism. According to them, there are no basic moral values that are absolutely correct and necessarily historically invariable. First, no moral principle can be treated as a tautological truth (see Boniolo 1990, pp. 107, 117–118). Moreover, ethical views cannot be found in experience. Popper, like Hayek, underlined that this is a consequence of classical logic and, more specifically, of Hume’s law (see Antiseri 2010, pp. 45 ff.). According to Hume’s law, which is implicit in classical logic, a moral conclusion cannot be inferred validly from statements of fact. In other words, this law establishes that, since descriptions of the world are expressed by using the indicative mood, they cannot logically imply any ethical obligation. Within the framework of classical logic, it is impossible to deduce an argument that is expressed by using the imperative mood from an argument that is expressed by using the indicative mood. Hume’s law implies that, while the ethical presuppositions of action and science can be defended with rhetorical arguments, they are in a sense arbitrary.

Generally, the social scientists who criticize Hume's law implicitly use the rules of classical logic to develop their economic, historical or sociological analyses (for example, Rothbard 1997). They do not appreciate that their standpoint is inconsistent. If one accepts classical logic, then one must also accept Hume's law. It must be added that, at least in principle, we cannot rule out the possibility of conceiving a different kind of logic that could allow the inference of choices of values from statements of fact. However, even this alternative logic would not enable us to defend a foundationalist conception of ethics. Even if we conceive inferential rules that allow us to deduce values from descriptions of reality, this deduction would not imply something absolutely indisputable – because facts are not essences but rather fallible and selective constructions. They are not noumena, but phenomena. If we had rules enabling us to deduce moral conduct from facts, we would have rules allowing us to deduce moral conduct from a partial and relative standpoint. As we have shown, the same fact can be analyzed and built from infinite alternative points of view. Because of this, and because our knowledge is fallible, we could not demonstrate that the truth of any deduction is implied by the certain and absolute knowledge of the fact informing our deduction (see Boniolo 1990, pp. 105–106).

2.16 The Anti-foundationalist Standpoint of Hayek's Cognitive Psychology

Hayek, who defended a fallibilist and evolutionary approach, shared Gadamer's theory of the historical finitude of humankind and his criticism of Bacon's and Descartes' viewpoints. According to Hayek, both variants of foundationalism are afflicted with, to use Gadamer's words, historical short-sightedness. Hayek's idea that the sensory order is linked to an interpretative horizon that is not invariable "but ... incessantly changing" (1952b, p. 175) undermines empiricist or Baconian foundationalism. This variant of foundationalism assumes that we can acquire basic, absolute and invariable beliefs by means of perceptive experience. It is evident that, if perception is not reducible to sense-data, this assumption must be rejected. Hayek, in *The Sensory Order*, destroyed "the concept of elementary and constant sensations as ultimate constituents of the world" (1952b, p. 176). Hayek's position is incompatible with theories such as Russell's "neutral monism", according to which the world consists of just one type of substance "which is both physical and psychical" (ibid.). This view is misleading, because it "is explicitly based on the assumption that sensations are what is common to the mental and the physical world, and that their essence is their independence from past experience" (ibid.). Russell's approach "seems to be based on entirely untenable psychological conceptions" (ibid.). Considering the evolutionary and historical nature of the process by which the difference between sensory qualities are determined, we have to assume, unlike Russell, "that they will remain variable and that the distinction between them will be modified by new experiences" (p. 175).

Hayek also used the concept of temporality of knowledge to criticize the Cartesian variant of foundationalism. Like Gadamer, he emphasized Descartes' incapacity to appreciate the historicity of human reason and intellectual intuition. In particular, Hayek criticized Cartesian dualism, i.e. "the conception of an independently existing mind substance which stands outside of the cosmos of nature" and which man is endowed with "from the beginning" (Hayek 1973, p. 17). According to Hayek, since such a theory neglects the fact that reason is the product of both a biological history and a cultural history, it "is contrary to all we know about the evolution of man" (ibid.). Because every aspect of cognition is linked to both of these different histories, and because those histories are still playing themselves out, both perceptive and intellectual skills are based on presuppositions that are meant to change.

Like the hermeneuticians, Hayek blamed Descartes' inability to conceive that all knowledge is linked to tacit and practical skills which cannot be made completely explicit (see Nemo 1988, pp. 60–61). Hayek (1973, p. 10) considered Descartes' idea that we do not have "to accept anything as true which could not be logically derived from explicit premises" that are "clear and distinct, and therefore beyond possible doubt", as based on misleading assumptions. Hayek's reflections on the impossibility of making the tacit dimension of knowledge completely explicit are linked to his analysis of what phenomenological hermeneutics calls the primacy of perception. Like Gadamer, he thought that consciousness was the only door to knowledge and therefore naive realism must be rejected. While the interpretative horizon represented by human consciousness can change, it is impossible to put such a horizon aside in order to reach a perfectly neutral standpoint. Following Immanuel Kant, Hayek emphasized that, because human beings are always and necessarily linked to a certain a priori perspective, their reason is intrinsically limited: "There is ... on every level, or in every universe of discourse, a part of our knowledge which, although it is the result of experience, cannot be controlled by experience, because it constitutes the ordering principle of that universe" (1952b, pp. 169–170; see also Hayek 1967, pp. 60–63).

In this regard, Hayek spoke of a Gödelian limit; according to Hayek, some basic or ultimate interpretative categories cannot be fully explained because they are the presuppositions of all the others. They are prior to any meaning, so they have no place in the order of meanings that they create. To get around this problem, Hayek argued, we should place ourselves outside our own mind by reaching an absolute standpoint – a superhuman horizon (Hayek 1952b, pp. 184–190; see also Nemo 1988, pp. 60–61; Boniolo 1990, pp. 116–127; Heritier 1997, pp. 42–43; Aimar 2008; Koppl 2010, pp. 3 ff., 2008, pp. 115–118; Fano and Graziani 2011; Birner 1999, 2013).

The connection between the hermeneutical criticism of foundationalism and the kind of proto-connectionist and anti-positivistic view that Hayek proposed in *The Sensory Order* has recently been underlined by Varela and other theorists of enaction. These cognitive scientists argued that the Hayekian-like theory of mind matches the hermeneutical concept of the *historical finitude* of humankind. If human knowledge depends on common sense, and if human common sense is nothing more than a biological and cultural tradition, we have to come to the

conclusion – they stated – that foundationalism is wrong: “what we took to be solid ground is really more like shifting sand beneath our feet” (Varela et al. 1991, p. 217). According to the enactivists, the logical implication of the mind's self-organization and the criticism of positivistic epistemology is the defense of “a kind of thought that would give up the modernist quest for foundations, yet without criticizing this quest in the name of another, truer foundation” (ibid., p. 229).

References

- Agonito, R. 1975. Hayek revisited: Mind as a process of classification. *Behaviorism: A Forum for Critical Discussions* 3(2): 162–171.
- Aimar, T. 2008. Self ignorance: Toward an extension of austrian paradigm. *The Review of Austrian Economics* 21(1): 23–43.
- Albert, H., and D. Antiseri. 2002. *Epistemologia, ermeneutica e scienze sociali*. Roma: Luiss Edizioni.
- Antiseri, D. 1981. *Teoria unificata del metodo*. Torino: Utet.
- Antiseri, D. 1996. Metodologia delle scienze sociali e teoria della politica nella Scuola austriaca di economia. In *Storia della filosofia*, Vol. IX, ed. N. Abbagnano. Milan: TEA.
- Antiseri, D. 2006. Epistemology and hermeneutics. In *Karl Popper philosopher of science*, ed. M. Alai, and Tarozzi, G. Rubbettino: Soveria Mannelli.
- Antiseri, D. 2010. *Laicità: Le sue radici, le sue ragioni*. Soveria Mannelli: Rubbettino.
- Antiseri, D. 2011. Rothbard e la sua errata interpretazione della teoria della interpretazione, *Nuova Civiltà delle Macchine* January–June: 1–2.
- Barthelemy, J.-P., De Glas, M., Descles, J.-P., and Petitot, J. 1996. Logique et dynamique de la cognition. *Intellecta* 2(23).
- Bernstein, R.J. 2002. Hermeneutics, critical theory and deconstruction. In *The Cambridge companion to Gadamer*, ed. R.J. Dostal. New York: Cambridge University Press.
- Besnier, J.-M. 1993. *Histoire de la philosophie moderne et contemporaine*. Paris: Grasset.
- Besnier, J.-M. 2005. *Les théories de la connaissance*. Paris: Puf.
- Birner, J. 1999. The surprising place of psychology in the work of F. A. Hayek. *History of Economic Ideas* 7: 1–21.
- Birner, J. 2013. F. A. Hayek's The sensory order: An evolutionary perspective? *Biological Theory*. Pre-Published online: 30 September 2014. doi:[10.1007/s13752-014-0189-4](https://doi.org/10.1007/s13752-014-0189-4).
- Boettke, P.J. 1990. Interpretative reasoning and the study of social life. *Methodus* 2(2).
- Boniolo, G. 1990. *Questioni di filosofia e di metodologia delle scienze sociali*. Rome: Borla.
- Boudon, R., and F. Bourricaud. 1990. *A critical dictionary of sociology*. Chicago, IL: University of Chicago Press.
- Bradley, F.H. 2008. *Appearance and reality: A metaphysical essay*. Whitefish, MA: Kessinger Publishing.
- Butos, W.N. 2010. The unexpected fertility of Hayek's cognitive theory: An introduction to the social science of Hayek's “The sensory order”. In *Advances in Austrian economics*, Vol. 13, ed. W.N. Butos, 1–20.
- Butos, W.N. 2011. Towards an Austrian theory of expectations. *Nuova Civiltà delle Macchine* (January–June) 1–2.
- Butos, W.N., and T. McQuade. 2005. The sensory order and other adaptive classifying systems. *Journal of Bioeconomics* 7: 335–358.
- Butos, W.N., and R.G. Koppl. 2006. Does the sensory order have a useful economic future? In *Advances in Austrian economics*, vol. 8, ed. E. Krecke, and K. Krecke. Oxford: JAI Press.
- Caldwell, B. 1994. Hayek's scientific subjectivism. *Economics and Philosophy* 10: 305–310.

- Caldwell, B. 2004. Some reflections on F. A. Hayek's The sensory order. *Journal of Bioeconomics* 6: 239–254.
- Caldwell, B. 2007. *Hayek's challenge: An intellectual biography of F. A. Hayek*. Chicago, IL: University of Chicago Press.
- Caldwell, B. 2009. Some comments on Lawson's reorienting economics: Same facts, different conclusions. In *Reorienting economics: Tony Lawson and his critics*, ed. Edward Fullbrook, 13–19. London/New York: Routledge.
- Campagnolo, G. 2006. "Seuls les extrémistes sont cohérents...": Rothbard et l'Ecole austro-américaine dans la querelle de l'herméneutique. Lyon: ENS Éditions.
- Campbell, D.T. 1974. Evolutionary epistemology. In *The philosophy of Karl R. Popper*, P.A. Schilpp, 412–463. LaSalle, IL: Open Court.
- Costall, A. 2004. From Darwin to Watson (and cognitivism) and back again: The principle of animal–environment mutuality. *Behavior and Philosophy* 32: 179–195.
- Croce, B. 1921. *Theory and history of historiography*. Ann Arbor, MI: University of Michigan Library.
- Crotty, M. 1998. *The foundation of social research: Meaning and perspectives of social research*. London: Sage Publications.
- De Vecchi, N. 2003. The place of Gestalt psychology in the making of Hayek's thought. *History of Political Economy* 35(1).
- Di Iorio, F. 2009. Hayek's connectionist psychology as a defense for the sociology of good reasons. In *Raymond Boudon: A life in sociology—Essays in honour of Raymond Boudon*, 4 Vols. ed. M. P. Cherkaoui, and Hamilton. Oxford: The Bardwell Press.
- Di Iorio, F. 2010. The sensory order and the neurophysiological basics of methodological individualism. In *The social science of Hayek's "The sensory order"*, ed. W.N. Butos. Bingley, UK: Emerald.
- Di Iorio, F. 2015. Hayek and the hermeneutics of mind. *Social Science Information* 54(2): 177–191.
- Di Nuoscio, E. 2004. *Tucidide come Einstein: La spiegazione scientifica in storiografia*. Soveria Mannelli: Rubbettino.
- Di Nuoscio, E. 2006. *Il mestiere dello scienziato sociale: Un'introduzione all'epistemologia delle scienze sociali*. Naples: Liguori.
- Di Nuoscio, E. 2014. *Ermeneutica ed economia*. Soveria Mannelli: Rubbettino.
- Dostal, R.J. 2002. Gadamer's relation to Heidegger and phenomenology. In *The Cambridge companion to Gadamer*, ed. R.J. Dostal. Cambridge, UK: Cambridge University Press.
- Dreyfus, H.L., and S.E. Dreyfus. 2000. *Mind over machine. The power of human intuition and expertise in the era of the computer*. New York: Free Press.
- Dupuy, J.-P. 1990. *Ordres et désordres. Enquête sur un nouveau paradigme*. Paris: Seuil.
- Ebeling, R.M. 1986. Toward a hermeneutical economics: Expectations, prices, and the role of interpretation in a theory of the market process. In *Subjectivism, intelligibility and economic understanding*, ed. I.M. Kirzner. London: Macmillan.
- Érdi, P. 1996. The brain as a hermeneutic device. *BioSystems* 38: 179–189.
- Fano, V., and P. Graziani. 2011. *On the necessary philosophical premises of Gödelian arguments*. Unpublished paper.
- Fleetwood, S. 1995. *Hayek's political economy: The socio-economics of order*. London/New York: Routledge.
- Franco, G. 2012. *Conoscenza e interpretazione. L'inaspettata convergenza tra l'epistemologia di Popper e l'ermeneutica di Gadamer*. Soveria mannelli: Rubbettino.
- Fuster, J. 1995. *Memory in the cerebral cortex: An empirical approach to networks in the human and nonhuman primate*. Cambridge, MA: MIT Press.
- Fuster, J. 2003. *Cortex and mind: Unifying cognition* Oxford: Oxford University Press.
- Gadamer, H.-G. 1981. *Reason in the age of science*. Cambridge, MA: MIT Press.
- Gadamer, H.-G. 1997. *Philosophical hermeneutics*. Berkley/Los Angeles/London: University of California Press.
- Gadamer, H.-G. 2006. *Truth and method*. London/New York: Continuum.

- Gallagher, S., and D. Zahavi. 2008. *The phenomenological mind: An introduction to philosophy of mind and cognitive science*. London: Routledge.
- Gray, J. 1986. *Hayek on liberty*. Oxford: Basil Blackwell.
- Grondin, J. 2002. Gadamer's basic understanding of understanding. In *The Cambridge companion to Gadamer*, ed. R.J. Dostal. New York: Cambridge University Press.
- Grondin, J. 2006. *L'Herméneutique*, Paris: Puf.
- Hayek, F.A. 1952a. *The counter-revolution of science studies on the abuse of reason*. Indianapolis, IN: Liberty Press.
- Hayek, F.A. 1952b. *The sensory order: An inquiry into the foundations of theoretical psychology*. London: Routledge & Kegan Paul.
- Hayek, F.A. 1967. *Studies in philosophy, politics and economics*. Chicago, IL: University of Chicago Press.
- Hayek, F.A. 1973. *Law, legislation and liberty, Vol. 1: Rules and order*. Chicago, IL: University of Chicago Press.
- Hayek, F.A. 1978. *New studies in philosophy, politics, economics and the history of ideas*. London: Routledge & Kegan Paul.
- Hayek, F.A. 1979. *Law, legislation and liberty, Vol. 3: The political order of a free people*. Chicago, IL: University of Chicago Press.
- Hayek, F.A. 1988. *The fatal conceit: The errors of socialism*. London/New York: Routledge.
- Hebb, D.O. 1949. *The organization of behavior*. New York: Wiley.
- Heritier, P. 1997. *Ordine spontaneo ed evoluzione nel pensiero di Hayek*. Napoli: Jovene.
- Johnson, M. 1987. *The body in the mind: The bodily basis of imagination, reason, and meaning*. Chicago, IL: Chicago University Press.
- Koppl, R. 2008. Scientific hermeneutics: A tale of two Hayeks. *Advances in Austrian Economics* 11: 99–122.
- Koppl, R. 2010. Some epistemological implications of economic complexity. *Journal of Economic Behavior & Organization* 76: 859–872.
- Lachmann, L. 1977. *Capital, expectations, and the market process: Essays on the theory of the market economy*. Kansas City, MO: Sheed Andrews and McMeel.
- Lachmann, L. 2007. *The legacy of Max Weber*. Auburn, AL: The Ludwig von Mises Institute.
- Lavoie, D. (ed.). 1991. *Economics and hermeneutics*. London/New York: Routledge.
- Laurent, A. 1994. *L'individualisme méthodologique*. Paris: Puf.
- Lawn, C. 2006. *Gadamer: A guide for the perplexed*. London: Continuum.
- Livet, P. 2005. *Qu'est-ce qu'une action?*. Paris: Vrin.
- Madison, G.B. 1989. Hayek and the interpretative turn. *Critical Review* Spring.
- Marsh, L. 2010a. Ryle and Oakeshott on the know-how/know-that distinction. In *The meanings of Michael Oakeshott's conservatism*, ed. C. Abel. Exeter: Imprint Academic.
- Marsh, L. 2010b. Hayek: Cognitive scientist avant la lettre. *Advances in Austrian Economics* 13: 115–155.
- Marsh, L., and C. Onof. 2008. Stigmergic epistemology, stigmergic cognition. *Cognitive Systems Research* 9: 136–149.
- Maturana, H.R., and F.J. Varela. 1980. *Autopoiesis and cognition: The realization of the living*. Dordrecht, Netherlands: Reidel.
- Mantzavinos, C. 2006. *Naturalistic hermeneutics*. Cambridge, UK: Cambridge University Press.
- Moran, D. 2000. *Introduction to phenomenology*. London/New York: Routledge.
- Morrison, R.P. 1978. Kant, Husserl, and Heidegger on time and the unity of consciousness. *Philosophy and Phenomenological Research* 39(2) (December): 182–198.
- Nadeau, R. 1997. Hayek and the complex affair of the mind. Sixty-seventh Annual Conference of the Southern Economic Association, Atlanta, Georgia, 21–23 November.
- Nemo, P. 1988. *La société de droit selon Hayek*. Paris: Puf.

- Núñez, R., and W.J. Freeman (eds.). 1999. *Reclaiming cognition: The primacy of action, intention and emotion*. Thorverton, UK: Imprint Academic.
- O'Driscoll, G.P., and M.J. Rizzo. 1995. *The economics of time and ignorance*. Oxford/New York: Basil Blackwell.
- Petitot, J. 2002. Vers des lumières hayekiennes: de la critique du rationalisme constructiviste à un nouveau rationalisme critique. In *Friedrich Hayek et la philosophie économique: Après le Colloque de Cerisy*. *Revue de Philosophie économique* 2 ed. A. Leroux, and R. Nadeau.
- Petitot, J. 2003. Morphodynamical enaction: The case of color. In Bacigalupo, J., and Palacios, A. G. eds. *Biological Research: A Tribute to Francisco Varela* 36(1): 107–112.
- Petitot, J. 2009. *Per un nuovo Illuminismo*. Milan: Bompiani.
- Petitot, J., J.F. Varela, B. Pachoud, and J.-M. Roy. 1999. Beyond the gap: An introduction to naturalizing phenomenology. In *Naturalizing phenomenology: Issues in contemporary phenomenology and cognitive science*, ed. J. Petitot, J.F. Varela, B. Pachoud, and J.-M. Roy. Stanford, CA: Stanford University Press.
- Popper, K.R. 1957. *The poverty of historicism*. London/New York: Routledge.
- Popper, K.R. 1980. Autointerpretazione filosofica e polemica contro i dialettici. In *I filosofi tedeschi contemporanei* (Verfall der philosophie. Politik deutscher Philosophen), ed. C. Grossner. Rome: Città nuova.
- Popper, K.R. 1994. *The myth of the framework*. In *defence of science and rationality*. London/New York: Routledge.
- Popper, K.R. 2002. *Conjectures and refutations*. London: Routledge.
- Ricoeur, P. 2007. *From text to action: Essays in hermeneutics, II*. Evanston, IL: Northwestern University Press.
- Rizzello, S. 1999. *The economics of mind*. Northampton, MA: Edward Elgar.
- Rizzo, M.J. 2000. Real time and relative indeterminacy in economic theory. In *Time in contemporary intellectual thought*, ed. P. Baert, 173–188. North-Holland: Elsevier Science.
- Rothbard, M.N. 1989. The hermeneutical invasion of philosophy and economics. *Review of Austrian Economics* 3: 45–49.
- Rothbard, M.N. 1997. *The logic of action I: Method, money, and the Austrian school*. Cheltenham, UK: Edward Elgar.
- Smith, B. 1997. The connectionist mind: A study of Hayekian psychology. In *Hayek economist and social philosopher: A critical retrospect*, ed. S.F. Frowen. London: Macmillan.
- Storr, V. 2011. On the hermeneutics debate: An introduction to a symposium on Don Lavoie's "The interpretive dimension of economics—Science, hermeneutics, and praxeology". *The Review of Austrian Economics* 24(2): 85–89.
- Taylor, C. 2002. Gadamer on the human sciences. In *The Cambridge companion to Gadamer*, ed. R.J. Dostal. Cambridge, UK: Cambridge University Press.
- Thompson, E. 2007. *Mind in life: Biology, phenomenology, and the sciences of mind*. Cambridge, MA: Harvard University Press.
- Thompson, E., A. Palacios, and F. Varela. 1992. Ways of coloring: Comparative color vision as a case study in cognitive science. *Behavioral and Brain Science* 15: 1–45.
- Van Gelder, T. 1999. Wooden iron? Husserlian phenomenology meets cognitive science. In *Naturalizing phenomenology: Issues in contemporary phenomenology and cognitive science*, ed. J. Petitot, J.F. Varela, B. Pachoud, and J.-M. Roy. Redwood City, CA: Stanford University Press.
- Varela, F.J. 1979. *Principles of biological autonomy*. North-Holland/New York: Elsevier.
- Varela, F.J. 1989a. *Connaître les sciences cognitives: Tendances et perspectives*. Paris: Seuil.
- Varela, F.J. 1989b. *Autonomie et Connaissance: Essai sur le vivant*. Paris: Seuil.
- Varela, F., E. Thompson, and E. Rosch. 1991. *The embodied mind: Cognitive science and human experience*. Cambridge, MA: MIT Press.
- Varela, F.J. 1999. The specious present: A neurophenomenology of time consciousness. In *Naturalizing phenomenology: Issues in contemporary phenomenology and cognitive science*, ed. J. Petitot, J.F. Varela, B. Pachoud, and J.-M. Roy. Redwood City, CA: Stanford University Press.

- Volpi, F. 2003. Herménéutique et philosophie pratique. In *L'héritage de Hans-Georg Gadamer*, ed. Guy Deniau, and Jean-Claude Gens. Paris: Société d'anthropologie phénoménologique et d'herméneutique générale.
- von Mises, L. 1998. *Human action: A treatise on economics*. Auburn, AL: Ludwig von Mises Institute.
- Wachterhauser, B. 2002. Getting it right: Relativism, realism, and truth. In *The Cambridge companion to Gadamer*, ed. R.J. Dostal. Cambridge, UK: Cambridge University Press.
- Weber, M. 1978. *Selections in translation*. Cambridge, UK: Cambridge University Press.
- Westphal, M. 2008. Hermeneutics as epistemology. In *The Blackwell guide to epistemology*, ed. J. Greco, and E. Sosa. Oxford, UK: Basil Blackwell.
- Winograd, T., and F. Flores. 1987. *Understanding computers and cognition: A new foundation for design*. Norwood, NJ: Ablex Corporation.
- Zanotti, G. 2007. Intersubjectivity, subjectivism, social sciences, and the Austrian school of economics. *Journal of Market & Morality* 10(1) (Spring 2007): 115–141.

<http://www.springer.com/978-3-319-19511-7>

Cognitive Autonomy and Methodological Individualism

The Interpretative Foundations of Social Life

Di Iorio, F.

2015, XV, 185 p., Hardcover

ISBN: 978-3-319-19511-7