

Wittgenstein's Philosophy and Austrian Economics

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Abstract

The paper, following a suggestion by Kripke, argues that there is an illuminating analogy between Wittgenstein's philosophy and Austrian economics (particularly that of Mises and Hayek). Most scholars interpret paragraph 608 of Wittgenstein's Zettel (hereafter Z608) to suggest that language might arise out of physical chaos at the neural centre. Since, however, Wittgenstein holds that the philosopher must not advance theories, he cannot consistently be advancing such theories in Z608. Rather, all the key concepts in Z608 must be cashed in terms of Wittgenstein's "forms of life". Thus, Z608, read carefully, suggests that language "arises", not out of chaos in the brain, but out of the chaotic activities in human forms of life. The paper shows that an analogous picture occurs in the early Austrian economists (such as Havek, who is Wittgenstein's cousin, and Mises). Z608 is part of a still unappreciated Austrian movement that emphasizes the creative chaos in human life. In this connection the paper explains how Z608 is an application of Wittgenstein's "private language argument" against a neural theory of a private language. Finally, the paper shows that the real argument in Z608 traces to early Austrian phenomenology-shedding light both on Wittgenstein's philosophy and on Austrian economics.

Key words: Wittgenstein; Mises; Hayek; Market economics; Chaos theory; Private language argument; Forms of life

INTRODUCTION

No supposition seems to me more natural than that there is no process in the brain correlated with associating or with thinking; so that it would be impossible to read off thought processes from brain processes. I mean this: If I talk or write, there is, I assume, a system of impulses going out from my brain and correlated with my spoken or written thoughts. But why should the system continue further in the direction of the centre? Why should this order not proceed, so to speak, out of chaos?

Wittgenstein, Zettel (1970, pgh. 608)¹

The aspects of things that are most important for us are hidden by their simplicity and familiarity. (One is unable to notice something—because it is always before one's eyes.)

Wittgenstein, Philosophical Investigations (1958, pgh. 129)

Although most scholars understand Wittgenstein against the background of Anglo-American linguistic philosophy, it is important to remember that he was educated in a distinctive Austrian intellectual tradition that included both a philosophical tradition with roots in Brentano's and Husserl's phenomenological schools and a distinctive Austrian economic tradition, a version of market economics most closely associated with Menger, Mises and Hayek (Smith, 1994).² The present paper argues that Wittgenstein's philosophy of language

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¹ Wittgenstein's works are abbreviated thus: Notebooks, 1914-16 [NB]; Tractatus-Logico-Philosophicus [TLP]; Philosophical Investigations [PI]; Remarks on the Foundations of Mathematics [RFM]; Zettel [Z]; On Certainty [OC]; Culture and Value [CV]. References to TLP are by proposition number, to NB and CV, by page number, to PI, Z and OC, unless indicated otherwise, by paragraph number, to RFM, by section and paragraph number.

² Austrian economics has roots in Adam Smith (Callahan, 2004, pp.19-20). The relation of Milton Friedman to the Austrian school is complex. Although he has criticized some aspects of the Austrian school (Friedman, 1993), he is also heavily influenced by them (Friedman, 1990, p.6). For these reasons Friedman is employed in the present paper only as a source of the pencil-example and for his commentary on Hayek's views.

bears an illuminating analogy with aspects of Austrian economics.³

The idea of such an analogy has been suggested before. Kripke (1982, pp.112-113) remarks that there is an analogy between Wittgenstein's "private language argument" and Mises' argument that rational economic calculation under socialism is impossible. Waismann, Wittgenstein's main link to the Vienna circle, had close connections to Menger and Mises (Haller, 1988, p.11, 28, 38, 42). Menger wrote the Forward to Waismann's *Introduction to Mathematical Thinking* and Menger's *Dimensionstheorie* is discussed in the book. Finally, Hayek was Wittgenstein's cousin (Monk, 1991, p.518; Smith, 1994, p.304). The key passage in Wittgenstein for the present interpretation is pgh. 608 of *Zettel* (hereafter *Z*608) where Wittgenstein is usually understood to claim that language may arise out of neural chaos.

There are two main interpretations of Z608, the neurological interpretation (hereafter NI) and the religiouscosmological interpretation (hereafter RCI). According to NI, the centre and the chaos mentioned in Z608 are the neural centre and neural chaos, which mean that Z608 suggests that language and thought may arise out of chaos at the neural centre. Based on Wittgenstein's remark to Drury that he looks at problems from a religious point of view (Malcolm, 1997, p.1), RCI, holds that Z608 employs religious creation language (the emergence of order from chaos) to compare the production of language to the creation of a cosmos. Although the present paper agrees with RCI's critique of NI, some may find RCI to be too metaphorical. The present paper develops an Austrian Economic Model of Z608 (hereafter AEM) that is more concrete than RCI. The claim is not that Z608 is really about economic matters, but that its picture of the genesis of language in Z608 is instructively analogous to the Austrian view of the genesis of economic value in free-markets.

§ 1 summarises **RCI's** critique of **NI**. § 2 briefly sketches **RCI**. § 3 explains the basic points of the Austrian economic calculation model. § 4 explains the Austrian model of Z608. § 5 briefly discusses the analogy between the Austrian economic calculation argument and Wittgenstein's "private language" argument. § 6 argues that the key analogy linking Z608 to Austrian economics is that both are descriptions of *given* human *forms of life*.

1. CRITIQUE OF THE NEUROPHYSIOLOGICAL INTERPRETATION

[I]n Zettel 608-610 [Wittgenstein] ... suggests that for all we know, our behaviour could proceed from internal physical chaos, ...

McGinn, Wittgenstein on Meaning (1984, pp.112-113)

[W]e must not advance any kind of theory. ... We must do away with all *explanation* and description alone must take its place.

Wittgenstein, Philosophical Investigations (1958, pgh.109)

Since **RCI's** argument against **NI** have been stated elsewhere (McDonough, 2013, 2014a, 2014b), it is only necessary to summarize them here. **NI's** main theses are:

- **T1.)** *Z*608 suggests that language and thought may arise out of chaos.
- T2.) The chaos here is chaos at the neural centre.
- T3.) This chaos, is, therefore, physical chaos.
- **T4.)** Z608, therefore, undermines the standard scientific view about the neural basis for language and thought.

In fact, Z608 does not endorse any of **T1-T4**. First, Z608 does *not* state, as **T1** claims, that linguistic meaning (hereafter meaning_L) and mental content (hereafter content_M) may arise out of chaos.⁴ It states only that these may "*sozusagen*" (so to speak) do so. Wittgenstein's method is to make illuminating *comparisons* (*PI*, 126, 131; *RFM*, V.12; Z327; *OC*, 64; *CV*, 14, 26): "What I invent are "new *similes*" (*CV*, 19). That is, Z608 is stated in figurative language.

Since Wittgenstein does not advance theories, Z608, to be consistent with Wittgenstein's method, cannot, as **T2** claims, refer to the neural centre. The centre referenced in Z608 has to be of a kind that is "always before one's eyes"—and at *PI* (108) Wittgenstein refers to "ordinary life" as the "*Angelpunkt* of our real need." Although Anscombe translates "*Angelpunkt*" as "fixed point," it literally means the centre-point around which the circle is drawn by a compass. Similarly, at *RFM* (III.15) Wittgenstein identifies "the centre referenced in Z608 is, roughly speaking, the arena of shared human activities that make up Wittgenstein's "forms of life" (*PI*, 230).

This is confirmed by a close reading of Z608. Consider the $2^{nd}-4^{th}$ sentences in Z608 (numbered for convenience):

 $(\mathbf{S_1})$ There is, I assume, a system of impulses going out from my brain and correlated with my spoken or written thoughts. $(\mathbf{S_2})$ But why should the *system* continue further in the direction of the centre? $(\mathbf{S_3})$ Why should this order not proceed, *sozusagen*, out of chaos

In opposition to NI, S1 *endorses* the standard scientific view that there is a system of neural impulses that correlates with public behaviour (spoken and written sentences). NI mistakenly assumes that the word "centre" in S_2 means the neural centre, but a careful reading reveals that this is *not* the neural centre. Since S_1 specifies that the impulses move *from* the brain *towards* the world of public linguistic behaviour, and since S_2 , read naturally, asks why this system should continue further in that direction, the centre mentioned in S_2 is in that public world—and that

³ The present paper is concerned primarily with Wittgenstein's later philosophy in *PI*, *RFM*, *Z*, *OC*, and *CV*. However, occasional references are made to his "early" *TLP* and *NB*.

⁴ For simplicity, the present paper couches the argument in terms of meaning₁, but an analogous argument can be made for content_M.

is the location of Wittgenstein's "*Angelpunkt* of our real need" (*PI*, 108).

There is, however, an *implicit* reference to the neural centre in Z608. One can define the neural centre (or centre_n) as those neural structures that produce the system of neural impulses. Since, however, the whole point of Z608 is that the real centre of language, "the Anglepunkt of our real need" (PI, 108), is in the social world of shared human action, call this the social centre (or centre_{soc}). That is, since Wittgenstein describes only what is "always before one's eyes" (PI, 129), this centre must be "always before one's eyes"—but that is the centre_{soc}, not the centre_n. Thus, Z608 distinguishes the centre_n from the centre_{soc} and claims, roughly, that there is no reason to hold that the *material* centre, system explains the human *activities* in the centre_{soc} of language. Indeed, the main point of Z608 is to replace the old centred_n account of meaning_L with a centred_{soc} model (McDonough, 1989, pp.18-20).

This clarifies the notion of chaos in Z608. Since the centre in T2 is not the centre, the chaos referenced in T1 and T3 cannot be neural chaos. For this chaos too must be "always before one's eyes." Wittgenstein remarks at CV (65) that the philosopher must "descend" into "primeval chaos" and learn to feel at "home" there. But Wittgenstein's philosopher is at "home" in the "Angelpunkt of our real need," i.e., ordinary life-not in the cranial cavity. Thus, the chaos referenced in Z608 is chaos_{soc}, not chaos_n. Wittgenstein's description of the chaos in human activities is found on virtually every page of his later philosophy. One illuminating passage is at Z567 where he refers to "the great swarm [ganze Gewimmel] of human actions" as "the background against which we see any action". This swarming chaos of human activities constitute the "real foundations of [our] inquiry" (PI, 7, 129). Z608 does not suggest that meaning, arises out of chaos, at the centre, Z608 advances no *theories* about neural chaos. Rather, Z608 suggests that meaning, arises in a very different (non-causal) sense out of the chaos_{soc} of activities at the centre_{soc} of forms of life.⁵

Finally, Z608 does not, as **T4** holds, undermine the orthodox scientific belief of the neural basis of language. **S**₁ *endorses* that view: "[T]here is, I assume, a *system* ..."). The illusion that Z608 denies this scientific view is produced by the mistaken interpretation that the centre and chaos referenced in Z608 are the neural centre and neural chaos. Once it is recognized that this centre and chaos are, respectively, the centre of forms of life and the chaotic *Ganze Gewimmal* of human behaviour in forms of life, this illusion evaporates. Thus, when Z608 asks why that neural system should continue further in the direction

of the centre, it is asking why that neural system should continue further towards the "Angelpunkt of our real need" (ordinary life)—and when Z608 asks why meaning_L cannot arise, *sozusagen*, out of chaos, it is *not* asking why meaning_L cannot arise out of neural chaos, but why meaning_L cannot arise out of chaotic *Ganze Gewimmel* of human actions in the Angelpunkt of forms of life. For those kinds of centre_{soc} and chaos_{soc} are as Wittgenstein requires "already before one's eyes".

2. THE RELIGIOUS-COSMOLOGICAL MODEL OF ZETTEL 608

When Wittgenstein was working on the latter part of the *Philosophical Investigations*, he said to his ... friend Drury: ... "I am not a religious man but I cannot help seeing every problem from a religious point of view."

Malcolm, *Wittgenstein: From a Religious Point of View?* (1997, p.1)

To resolve ... philosophical problems one has to compare things which it has never occurred to anyone seriously to compare. Wittgenstein, *Remarks on the Foundations of Mathematics* (§ V.12)

In Wittgenstein's remark to Drury (hereafter **WRD**) Wittgenstein says he looks at philosophical problems "from a religious point of view," but that does not mean that he holds any religious views. **WRD** also states that he is "not a religious man." **WRD** only claims that Wittgenstein employs religious ideas to achieve perspective on philosophical problems. Just as Dennett (1996) takes an "intentional stance" on human beings without endorsing the existence of intentions, **WRD** states that Wittgenstein takes a "religious stance" on philosophical problems without committing him to any religious views.

The key images in Z608 (the centre, chaos, and the emergence of order), are seminal images in Western cosmogony tracing to Hesiod's Theogony and transmitted through the ages by a plethora of philosophers, scientists, theologians, and poets, including Wittgenstein's fellow Austrian Martin Buber, and Augustine and Goethe, who influenced Wittgenstein (McDonough, 2014). Indeed, similar religious-cosmological imagery is employed by many recent "chaos theorists" in chemistry, biology, ecology, economics, psychology, etc., to re-conceptualize numerous scientific problems (Gleick, 1997; Faggini & Parziale, 2012)—but no one thinks this commits them to religious views. Z608 is about meaning_L and content_M, not religion or cosmology. Wittgenstein only employs religious-cosmological similes in Z608 to suggest new perspectives his philosophical problems.

The idea of an intimate connection between language and cosmology has roots in Wittgenstein's early philosophy. At *NB* (84) Wittgenstein describes man [*der*

⁵ The account of the *non-causal* sense in which meaning_L "arises" out of a chaotic swarm of behaviour is analogous to the sense in which Austrian *Gestalt*-psychologists held that a figure "arises" out of a "chaos" of dots on canvas, but this must be left for another occasion.

Mensch] as the microcosm and at TLP (5.63) he states "I am my world (the microcosm)".⁶ Indeed, he adds that "the limits of my language mean the limits of my world" (TLP, 5.6). Although he does not endorse the microcosmic doctrine in his later philosophy, he never renounced it. Thus, when he moves away from the static conception of language in his earlier philosophy to the more dynamical conception in his later philosophy, it became natural for him to apply the *creation* models from cosmogony to his new view. By the static conception of language in his early philosophy is meant the views in TLP and NB in an eternal unchangeable logical structure underlying language and the associated dismissal of the importance of history to his philosophical views: "What has history to do with me?" (NB, 82). By the time of his later philosophy, Wittgenstein has reversed himself, describing his philosophical remarks as "remarks on the natural history of human beings" (PI, 25, 415). Since cosmogony, the description of *absolute* beginnings, is the ultimate in historical development, it becomes useful in his later philosophy to produce a cosmogony of meaning₁—with a crucial proviso. Although his later philosophy emphasizes natural history, it need not be an actual history. At (PI, 230) he remarks that "a fictitious natural history" is sufficient "for our purposes." Z608 is such a *fictitious* natural history, a *fictional* cosmogony, of meaning_L. By employing this fiction he hopes to achieve a liberating perspective on meaning. Since this cosmogony is *fictitious*, none of his remarks there have anything to do with scientific theories.

In summary, according to **RCI**, Z608 employs religious-cosmological language as a source of useful similes to clarify philosophical problems concerning meaning₁. Z608 compares the production of meaning₁. to something no one has ever compared it to before: the creation of the cosmos. Thus, the key concepts in the archetypal creation stories are applied to language. Just as the ancient cosmos arises out of chaos, human language arises, sozusagen, of out "chaos" of human actions. The "sozusagen" indicates that Wittgenstein is not proposing any theories. All of these religious-cosmological similes must be cashed in terms of descriptions of phenomena "already in plain view". Thus, what Z608 really suggests is that human language arises, sozusagen, out of the chaotic Ganze Gewimmel of human actions at the centre of forms of human life. However, though it is well and good to employ this liberating religious-cosmological picture, one wants a more concrete and believable account of this process. Fortunately, such an account is found in Austrian economics.

3. THE AUSTRIAN "ECONOMIC CALCULATION ARGUMENT"

The evenly rotating economy is a fictitious system in which the market prices of all goods ... coincide with the final prices. ... The system is in perpetual flux, but it ... revolves evenly round a fixed center, ... The plain state of rest is disarranged again and again but it is instantly reestablished ...

Mises, Human Action (1996, § XIV.5)

Although the Austrian school was begun in the late 19thearly 20th centuries in Vienna by a group of Austrians, one need not be an Austrian to belong to the Austrian school (e.g., Jevons was English and Walrus French). The Austrian school denotes a set of ideas begun in Austria by Austrians but it soon crossed national boundaries. Further, it is customary to distinguish between first-wave and secondwave Austrians. Many first-wave "Austrians" trace their views to Adam Smith's conception of laissez faire but some second-wave members such as the Rothbard (Rockwell, 2014, p.153), criticize Smith. Similarly, although Friedman is usually identified with the Chicago School, the two schools often overlap (Miller, 1962; Garrison, 1996, note 2). Thus, Friedman, Hayek, Stigler, Popper, and Mises founded the Mont Pelerin Society to promote the free-market principles of "neoliberalism" (Harvey, 2007, pp.20-22). The present task is simplified by the fact that the present paper seeks only to clarify those ideas of the first-wave Austrians with which Wittgenstein can be expected to have been acquainted.

The key Austrian thesis is the "economic calculation argument" (hereafter ECA) that socialism inevitably fails due to an inability to do justice to the complexity of the market. The present paper is not, however, committed to defend ECA *per se*. Hayek and Mises understand socialism to involve a central planning but some have argued that socialist models without central planning are conceivable (Nove, 1992, pp.40, 45-49). Thus, it might be more accurate to describe ECA as an argument against economic central planning rather than socialism as such, but the question in the present paper is not whether ECA succeeds against socialism. It is whether it provides a useful *simile* for illuminating Wittgenstein's philosophical views.

One basic theses of **ECA** is that a "socialist" economy, where production decisions are made by some central body, cannot cope with all the information needed to make such decisions effectively (Hayek, 2011b, p.491, 495, etc.). Since the decision-making center of a socialist economy is a *central body* (such as a bureaucrat in a Moscow), call this kind of central decision-making body a "centre_b." Hayek (1945, p.526; Sharbek, 2009, p.109) sees marketprices as essential *information-mechanisms*. Note that prices as such are not such information-mechanismss. Someone in a Moscow central_b cubicle might decide that the price of a litre of vodka should be 2 roubles,

 $^{^{6}}$ NB (84) identifies man as the microcosm but Wittgenstein, at TLP (5.63), employing the *indexical*, "I," states of himself that he is the microcosm. In fact, the less solipsistic formulation in NB is more in harmony with the emphasis on the social community in his later philosophy but this does not affect the present point.

but *this* kind of price conveys no information—except about what one Moscow bureaucrat thinks. In a marketeconomy, by contrast, the price arises, not in the Moscow centre_b, but in the actual *home* of the market-activities were the goods are produced.

A second basic thesis of the early Austrians is that the value of goods is not determined by the intrinsic value of the goods or by the labour involved in producing them but by *the value that acting individuals place on the good* (Birner & Zijp, 1994, p.94; Gordon, 2000, pp.185-86). In a market-economy, the value of a good is the value that arises from the subjective valuations of active members of that market.

One should not infer that the Austrian model completely eschews *any* notion of a centre. Smith, in *The Wealth of Nations*, writes:

Home is in this manner the centre ... round which the capitals of the inhabitants of every country are continually circulating, and towards which they are always tending, ... (Chap. 2).

The natural price ... is, as it were, the central price, to which the prices Of all commodities are continually gravitating. (Chap. 7).

Mises (1996, § 15.1) employs similar imagery,

The market is the focal point to which the activities of the individuals converge. It is the centre from which the activities of the individuals radiate.

Since there is no physical gravity here, talk of market "centres of gravity" is a simile. That is, the financial capital in a country, *sozusagen*, gravitates *towards* its "home market", and the activities at this economic centre_{soc} determine the natural price of a good. But *how* do these activities in the centre_{soc} fix the natural price?

Whereas a socialist economy requires a central_b body, such as a Moscow bureaucrat, to set the price, a marketeconomy revolves, *sozusagen*, around the center_{soc} of the market-actors. The Austrians are speaking loosely when they say that they oppose centrally planned economies. It is more accurate to say that they distinguish a centre_b from a centre_{soc} and that they oppose economies based on the former and support economies based on the latter. Just as Copernicus distinguished a central earth and a central sun and argued for the replacement of the former by the latter, the Austrians distinguish economies based on a centre_b from those based on a centre_{soc} and argue for the replacement of the former by the latter.

Note also that in a free-market it is natural to speak of the centre_{soc} as the centre *towards* which the market activities are always gravitating. The financial capital in a country is, *sozusagen*, always gravitating *towards* its "home market" because this is where the natural price of a good is determined. But *how* do the activities in the centre_{soc} fix the natural price?

Hayek (2011a) does not think one will find the answer in the main economic models of his day because these are dominated by Aristotle's anti-evolutionistic view that the given order is fixed from all time. Thus, he (2011a) proposes an ancient evolutionary idea, tracing to Hesiod (2009), that order arises from chaos, as a model for free-markets.

This ancient idea that the economic order arises from "chaos" may seem mysterious. However, in his discussion of Hayek's *Road to Serfdom*, Friedman clarifies the idea. Referring to Hayek view that prices are information-mechanisms, Friedman (1994) points out that, even though "no one knows how to make a pencil" (i.e., no one person knows all the complexities involved, facts about the best kind rubber, the right kind of wood, the way to machine that kind of wood, the processing of graphite, etc., not to mention all the languages, customs, laws, etc., involved in producing a simple pencil—let alone a car, a supercomputer or a spaceship), the market, seemingly effortlessly, produces an abundance of excellent cheap pencils all the time.⁷ Referring to this seemingly miraculous feat, Friedman (1994) remarks,

It's a marvelous example of how you can get a complex structure of cooperation and coordination which ... no individual who sat in a central office [planned] ... It was a market that coordinated all this.

It is, "*sozusagen*," out of the "chaos" of the market, the "chaos" of customs, facts, languages, rules, governments, etc., each of which is constantly changing and which no single person could possibly understand, that the price of a simple pencil somehow "arises".

Hayek does not claim that the market is *literally* chaotic. To a layman, a swarm of bees might seem chaotic, but an entomologist can see the order there. Similarly, the swarming behavior of the market-actors might seem chaotic from a distance (e.g., from Moscow), but each part of the process may be perfectly orderly. Anwar, in Malaysia, may not even know that the rubber he taps goes to produce pencils, but he knows everything about getting the sap from the tree. Ching, in Singapore, who buys the sap from Anwar's boss, knows nothing about tapping rubber, but he knows how to use formic acid to coagulate it into a suitable form for transport. Andy, in Australia, knows nothing about either Anwar's or Ching's expertise, but he knows how to find the best buyers around the world, etc..

Hayek (1991, pp.6, 73, 83-84, 102, 146, etc.; Wagner, 2010, p.5, 10, 51, etc.) think of the generation of economic order, i.e., an appropriate system of prices, from market chaos as a *spontaneous* process. Each of the actors in the process is free in the sense that their actions are not dictated by some central_b controller. Anwar does not tap rubber trees the way he does because Vlad in Moscow told him to do so. He does it that way because that is the way he and his father before him

⁷ Friedman (1990, pp.11-19, 274) also discusses the pencil-example in some detail.

have successfully managed to support their families for a century. The same is true of Ching and Andy. They all, however, are answerable to the central_{soc} market, but that is not like being subject to a central, controller. When Vlad, in his central, cubicle in Moscow, decides that a pencil should cost 20 cents, this generally frustrates Anwar and Ching. Since Vlad knows nothing about making pencils, he does not know what it *really* costs to produce one. Making a pencil looks so simple from Moscow. One just fastens some wood, graphite, and rubber together. By contrast, when the central_{soc} market makes it unprofitable to process rubber in the way Ching's family has been doing it for generations, i.e., if the Indonesians are now doing it more cheaply than they had done it before, this is useful information for Ching. If Ching adopts this new process before his Thai competitors do, he can make a great profit. This is how the market informs him about a more efficient way to process rubber sap-and everyone, including Ching, benefits in the long run, from the advances of his Indonesian competitors. The whole world will get a cheaper pencil next year, and Ching's family, for the first time in a century, can afford to send a child abroad to study.

In summary, the Austrians distinguish between the centre_b of socialism and the centre_{soc} of market-economies. The former is inevitably ignorant of all the required factors to sustain an efficient economy (resulting in selfdestructive pricing). By contrast, since the centre_{soc} is the "home" of the market-actors, it is well placed to generate the appropriate price. For this reason, one might say that in a market economy the market prices are always gravitating towards this central_{soc} home-for that is where the action is. Although the centre_b can generate prices in a very orderly manner (the "central plan" drawn up by a distinguished committee of experts), the centre_{soc} relies on the "chaos" of the market. One might think that this puts the socialist economy in a stronger position, but the opposite is the case. The seeming order in the socialist plan is bought at the price of ignorance of the overwhelming complexity in the real world market. By contrast, the "chaos" in the market-centre_{soc} really signifies nothing other than the market's capacity for a fine-tuned sensitivity to the real world complexity. This "fine tuning" might look chaotic from Moscow, but it is just right when seen from the *home* of the market actors where the goods are produced, priced, and used.

4. THE AUSTRIAN MODEL OF ZETTEL 608

If I am inclined to suppose that a mouse has come into being by spontaneous generation out of grey rags and dust, I shall do well to examine those rags very closely to see how a mouse may have hidden in them, ...But if I am convinced that a mouse cannot have come into being from these things then this investigation will [seem] superfluous. But first we must ... understand what it is that opposes such an examination of details in philosophy.

Wittgenstein, Philosophical Investigations (1958, pgh. 52)

Each of the sentences I write is trying to say ... the same thing over and over again.

Wittgenstein, Culture and Value (1980, p.7)

If each of Wittgenstein's sentences is attempting to say the same thing, then PI(52) is saying the same thing as Z608—and, in fact, Z608 has far more to do with PI (52) than it does with any of the verboten theories of NI. The idea in PI (52) of the spontaneous generation of a mouse from dust is taken from the history of science (Harris, 2002, p.5), but Wittgenstein does not believe that mice spontaneously arise from dust and rags. He employs this historical image as a useful *simile* for the genesis of meaning_L. In (PI, 51) he asks how meaning_L arises from the "technique of using signs" (PI, 51). Thus, the mouse in PI (52) symbolizes meaning, and the "grey rags and dust" symbolize the "technique of using signs". What PI (52) suggests is, *sozusagen*, that the "mouse of meaning," arises spontaneously from the "grey rags and dust," the chaos, in the uses of words.8 Alternatively, using the other image in PI (52), the passage suggests that meaning₁ is somehow hidden in the "grey rags and dust" of the uses of words-the point being that it is not really hidden, but that one must look very closely at the *details* to see it there.

Wittgenstein thinks that philosophers tend to oppose such a close examination of the details. This close examination of the details in the use of words is, roughly, what he means by "philosophical grammar" (*PI*, 664). Since philosophers oppose such a close examination of the details, they are driven to posit different kinds of account, such as neurophysiological accounts, of the genesis of meaning_L. When, however, one realizes that meaning_L "arises" from the uses of words, there is no longer any need to propose such neurophysiological theories. That is, *Z*608 no more proposes a theory about the brain than *PI* (52) does. But is not the idea of order arising spontaneously from chaos, *in any form*, just too mysterious?

In fact, each item in Wittgenstein's account of the genesis of meaning_L finds a parallel in the Austrian economic model. The market-price in Austrian economics corresponds to meaning_L. The activities of the market-actors constitute the "centre of gravity" of the market. Since the market, *sozusagen*, "revolves" around these activities (Ekelund & Herbert, 1995, p.357), they constitute the "*Angelpunkt* of our real need" (to

⁸ If the idea that the use of words is too chaotic to support an account of meaning_L seems obscure, recall that Kripke (1982, pp.9-11, etc.) argues that one cannot find the required meaning-fact in mere linguistic-usage. An analogous point is implicit in Quine's (1960, 72ff) thesis about the indeterminacy of translation.

understand how free-markets spontaneously generate prices). Though these activities at the centre of the market are, *sozusagen*, chaotic, it is out of this creative "chaos" at the market-centre that the natural price "arises." Just as Z608 suggests that meaning_L arises, *sozusagen*, out of the chaos at the centre of human *forms of life*, the Austrian economic model suggests that the natural price arises, *sozusagen*, out of the chaos of activities at the centre of human *economic forms of life*.

Just as Wittgenstein's claims in Z608 are qualified by a "sozusagen," the claims by the Austrian economists are similarly qualified. The activities of the economic actors in the market do not really produce a gravitational field. The market does not really "revolve" around those activities. The natural price does not really *arise* from market activities. These market activities are not literally chaotic. The Austrian economic notions of the center of gravity, chaos, arising, etc., are *similes* used to convey an illuminating *picture* of the way free-markets, *sozusagen*, "spontaneously" generate prices.

Unlike the religious similes employed in RCI, the Austrian model provides a *concrete* comprehensible account of the way the natural price "arises". There is nothing in principle mysterious about how a plethora of market-actors from different languages and cultures spread out across the globe are brought together in the market to produce an abundance of cheap excellent pencils that benefit everyone. Friedman (1990, p.3) refers to the generation of wealth by the free-market as a "miracle", but there is really nothing miraculous about it. The Austrian model makes no appeal to a divine controller, an elan vital, or religious similes. The Austrian model appeals only to what everyone is familiar with in their everyday life, namely, how human beings making free transactions with others who possess skills they themselves lack combine to produce mutually beneficial results. Unlike NI, which conjures out of Z608 the very sorts of causal theories that Wittgenstein vehemently and repeatedly rejects, the Austrian model invokes forms of economic life that precisely parallel Wittgenstein's forms of life. Scholars need not, therefore, fear that Z608 envisages connectionist engines, quantum indeterminacy, or piles of sawdust in the cranial cavity. Z608 is a portrait, not of hidden chaotic neurophysiological processes, but, sozusagen, of the creative chaos in human life displayed, as the Austrian economists claim,⁹ by free-markets "already before one's eyes."

5. THE AUSTRIAN MODEL OF THE PRIVATE LANGUAGE ARGUMENT

[A] private language is one that is ... necessarily private, in as much as it is used by some particular person to refer only to his own experiences.

Ayer, "Can there Be a Private Language?" (1966, p.253)

Since Kripke introduces the idea of a parallel between Austrian economics and Wittgenstein's "Private Language Argument" (hereafter **PLA**), it is useful to show how the Austrian model of Z608 relates to **PLA**. Since it is impossible to do justice to **PLA** here, the present aim is only briefly to sketch this analogy.

The idea behind PLA is that when S truly says, "I feel pain," she is stating something that she alone can understand it because she alone knows the referent of her expression "my pain". Her word "pain" belongs to her private language and no one else can understand as she does. This notion of a private language presupposes the notion of a private center by reference to which the meanings of the words in that language are determined. In most versions, this private center is something like a Cartesian ego (hidden behind the language-user's public presence as they describe their private experiences). One could, however, imagine that a material object like a brain is such a center insofar it describes its experiences from the unique neural position that it alone enjoys. That is, the key notion here is the notion of a private center of experience- which can come both in materialist and immateriality forms.

Wittgenstein's argument against the idea of such a language is that since, *ex hypothesis*, a private language does not admit public standards, whatever seems to that private center to be right is right. But, Wittgenstein holds, that is incoherent. If whatever will seem to the private center to be right is right, then one cannot speak of right or wrong here (*PI*, 201, 258). But without a standard for right and wrong one does not have a language—only babbling.

Compare this picture of a private language with the picture of a private price for an economic good! Recall that Vlad, in his central_b cubicle in Moscow, believes he knows the price of the pencil produced by a plethora of market-actors scattered around the globe. He is quite certain about the price because he decides it himself. What seems to Vlad to be the right price *is* the right price. If he decides a pencil should cost 50 cents, then it costs 50 cents. His certainty about the meaning of her word "pain". Just as Vlad in his central_b Moscow cubicle can decide the price of a pencil, Jane alone in her consciousness or brain can decide the meaning of her words.

The problem for Vlad's position arises when his private decision about the price runs up against the reality of the

⁹ Kripke (1982, p.112) opines that there is some merit to **ECA's** argument against socialism, and he may be right. Recall, however, that the present paper is not committed to defend **ECA** as an economic thesis but only as a *simile* for the genesis of meaning_L in *Z*608. The present philosophical appropriation of this economic *simile* does not deny the enormous amount of *empirical* work that remains to be done in economic proper in this connection. The study of the emergence of economic complexity is in its "infancy" (Beaudreau, 2011, 277ff).

market-place. For Vlad's price, decided in the sublime privacy of his central_b cubicle, has *nothing* to do with the real price of producing pencils. The real (natural) price of producing pencils is decided in the "chaos" of activities in the centre_{soc} of the market-place. Of course, that is precisely what Vlad finds unacceptable. Why, he reasons, should the price of pencils for the long-suffering masses be determined by the chaotic activities of hoards of market actors around the globe? Everything would be so much more orderly if a central_b bureaucrat decides the price. The Austrian reply is that it is precisely in that market "chaos" that the price runs up against the economic realities. If Vlad wishes to understand the real economic value of goods, he must abandon the unworldly security of his central_b Moscow cubicle and face the "chaos" of the market where the natural prices of goods aise in proximity with the actual production of those goods.

Z608 can be construed as a critique of the neural version of the **PLA** Just as the natural price in a freemarket, *sozusagen*, "arises," not in some central_b cubicle, but in the chaos_{soc} at the market-center_{soc} where human activities encounter the economic realities, so the meanings_L of words arise, not in the biological processes hidden at the neural centre_b, but, *sozusagen*, in the chaotic *Ganze Gewimmel* of human activities in the linguistic center_{soc} of gravity where were human activities run up against the realities of linguistic usage.

6. THE ULTIMATE GIVEN: FORMS OF LIFE

Materialist monism contends that human thoughts and volitions are the product of the ... cells of the brain and nerves. ... [But this] is a metaphysical hypothesis, although it supporters consider it as ... undeniable scientific truth. ... Human action ... is an element of cosmic activity ... [U]nder present conditions—it cannot be traced back to its causes, it must be considered as an ultimate given and ... studied as such.

Mises, Human Action (1996, § I.3)

What has to be accepted, the given, is—so one could say—forms of life.

Wittgenstein, Philosophical Investigations (1958, p.226).

Perhaps the most basic analogy between Wittgenstein's philosophical views and early Austrian economics is that both hold that human activities are the ultimate given. Mises understands this to imply that thoughts cannot be traced back to their neural causes—but that is the opening claim of Z608.¹⁰ Hayek (1955, p.49)

makes a similar claim: "[I]t would follow that it is impossible that our brain should ever be able to produce a complete explanation ... of the particular ways it itself classifies external phenomena."—but in that case, the brain could never produce a complete explanation of the classifications it itself employs in the meaningful_L sentences that it produces. Once again, that is equivalent to the claim in Z608.

Significantly, both Mises and Wittgenstein cite the same passage from Goethe in support of their respective views that human intelligence is grounded in action

As an *a priori* category the principle of action is on a par with the principle of causality. It is present in all knowledge of any conduct that goes beyond an unconscious reaction. "In the beginning was the deed". (Mises, 2003, p.15)

Language - I want to say - is a refinement, "In the beginning was the deed" (CV, 31).¹¹

Note that if *die Tat* is really "the beginning" of human language, then language cannot be the product of a prior beginning in the brain. Once again—that is the central point in Z608. Mises stresses that the "given" is not just another phenomena that requires explanation but must be "studied" in the way appropriate to the given. He (1996, § II.2) calls his investigation of this given phenomenon "praxeology." Since praxeology investigates this *a priori* phenomenon, Mises (1996, II.2) calls his view *methodological apriorism*.

Although Wittgenstein tends to avoid appeal to the a priori as such, seeing this as bound up with misleading philosophical pictures (PI, 158), he does hold that his philosophical descriptions are undeniable: "If one tried to advance theses in philosophy, it would never be possible to debate them because everything would agree to them" (PI, 27). Because of his longstanding view that there are no philosophical propositions per se (TLP, 6.54), expresses this in the indirect manner of PI (127), but his point is that even if someone managed to formulate a philosophical "proposition" it would state something so central to human life that it would be incontestable. Similarly, Mises (1996, II.3), referring to the "theorems" of praxeology, states that they are "incontestable" descriptions of the "reality of action".¹² Wittgenstein states that "we must do away with all explanation" (PI, 109). Mises (1996, II.2) writes, on similar grounds, that "It is impossible to explain [the

¹⁰ Mises does state a qualifier absent in Wittgenstein: "Under present conditions ...". However, the present paper argues only that Wittgenstein's views are *analogous* to those in Austrian economics, *not* that it is identical with them. See note 12 below!

¹¹ See also Wittgenstein, *OC* (402), Winch (1981), and Monk (1990, p.306)!

¹² Wittgenstein's position is analogous to Mises' view except that Mises still thinks in terms of theorems and propositions. Indeed, this may be the crucial modification Wittgenstein makes to the Austrian model when he applies it to the genesis of meaning_L. It is worth noting that Hayek did not embrace Mises' formulation of praxeology (Wozinski, 2010). But Hayek (1955, 46ff) does develop his own account of the given and its roots in action in his critique of scientism. See note 10 above!

theorems of praxeology] to a being who would not possess them on his own."¹³

Scholars are, therefore, mistaken in thinking that the argument in Z608 has anything essential to do with the brain. Although Z608 is addressed to the neurophysiological version of the view that language is produced by prior realities, one could rewrite Z608 to address other versions of this view. Two of the more obvious possible rewritings are:

Z608': No supposition seems more natural to me than that there is no process in a Cartesian ego correlating with associating or with thinking; ...

Z608": No supposition seems more natural to me than that there is no process in the faculties of sensibility and understanding correlating with associating or with thinking; ...

The argument in Z608 has no more essentially to do with the brain than it does with Cartesian egos, Leibniz's monads, Kant's transcendental unity of apperception, etc. The argument in Z608 is based on the given character of human action-the view that one cannot get behind action to something more basic. That is, the argument in Z608 is "phenomenological" in a broad sense of the word.¹⁴ The brain appears in Z608 only as the most common materialist form of the view that meaning, is grounded in something more basic. As surprising as it may seem, Z608 simply makes explicit what Wittgenstein means at PI (230). That is, if what must be accepted, the given, is "forms of life," then one cannot explain these forms of life (and the meaning, that "arises" in them) by reference to "prior" neural processes. Although scholars have expressed shock at the heretical theories they see in Z608, what is really shocking about Z608 is *not* that it suggests that there may be sawdust, causal indeterminacy, or connectionist architecture in the brain. Wittgenstein states what are really shocking about Z608 at (PI, 129), where, referring to philosophers, he writes,

The real foundations of his enquiry do not strike a man at all. Unless that fact has at some time struck him.—And this means: we fail to be struck by what, once seen, is most striking and most powerful.

What is really shocking in Z608 is that it suggests that meaning_L spontaneously arises, not out of neural chaos, but, *sozusagen*, out of the chaos, the "grey rags and dust", of human activities. In the terminology of Austrian phenomenology, what is really shocking in Z608 is the "discovery" that meaning_L is a denizen of the "life-

world."¹⁵ It is the discovery that the resolution of one's problems about meaning_L had been right "before one's eyes" all the time but that one had been "unable to notice" it for that very reason (PI, 129).

It is, of course, odd to speak of a "discovery" of something that is always before one's eyes. In fact, it is a bit like the unsettling "discovery" by the famous Austrian psychologist, Freud, that one has always loved one's mother and hated one's father.¹⁶ Perhaps this is why philosophers whose paradigms involve positing hidden neural mechanisms, cannot believe that Wittgenstein means what he says when he states one must not advance any kind of theory or explanation. Since he cannot mean what he says, he *must* be making a shocking claim about these hidden mechanisms, perhaps that they don't exist at all or that they are replaced by something bizarre (sawdust in the cranium, etc.). But Wittgenstein makes no such claims. S_1 (See § I) affirms the standard scientific belief in the existence of a brain-behaviour correlation. What Wittgenstein claims in Z608 is that, for the purposes of his problem of meaning, this brain-behaviour "System" is like a beetle in a box that can never be opened (Cf. PI, 293). That is, since he holds that meaning, is, *sozusagen*, at home, not "in the head", but in forms of life, the existence of this brain-behaviour system is irrelevant to the living phenomenon of meaning. Z608 only states something shocking if one already believes the metaphysical view that such *life-phenomenon* must be caused by something more basic. If (as Mises points out) one already holds that metaphysical view, then the "reminder" (PI, 89, 127, etc.) that meaning, is "always before one's eyes" must be shocking.

There is a tendency by many mainstream academics to view both Austrian economics and Wittgenstein's philosophy of language as strange interlopers into their respective fields. Russell, who held Wittgenstein's early philosophy in great esteem, could see no merit whatsoever in Wittgenstein's later philosophy (Monk, 1990, p.472). Similarly, many mainstream economists see Austrian economics as heterodox and unscientific. But if the present paper is correct, Wittgenstein's philosophy of language and Austrian economics are both applications of the same distinctively Austrian paradigm for thinking

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¹³ Compare Wittgenstein's "Nothing hidden" (*PI*, 435) with Mises' (2003, p.50) rejection of "metaphysical" views that purport to reveal what is "hidden to profane eyes".

¹⁴ For a discussion of the connection between Austrian economics and Austrian phenomenology see Kurrild-Klitgaard (2003). See also note 15!

¹⁵ Although Brentano and Husserl form part of the philosophical background the Austrian school the *sort* of given emphasized by Wittgenstein and the Austrian economists is qualitatively different from that emphasized by these phenomenologists. The given-ness of lived actions is qualitatively different from the alleged givenness of perceptual data. Thus, the Mises-Wittgenstein notion of the given would, *prima facia*, escape the arguments Sellars (1991, pp.140-141, etc.) mounts against "the myth of the given". Despite this significant qualification, the Austrian phenomenological model is closer to Wittgenstein's real position in Z608 than the most un-Wittgensteinian thesis **NI**.

¹⁶ Heaton (2000) discusses the analogies between Wittgenstein's views and psychoanalysis.

about a wide variety of human phenomena.¹⁷ If, as Kuhn (1970) points out, one attempts to understand new paradigms by reference to the very paradigms they are is opposing, then Z608 must seem to be asserting some strange thesis (that humans beings might literally not need brains to think)-which is simply not Wittgenstein's view.¹⁸ Z608 is in a real sense a very Austrian passage, the real point of Z608 emerges when one compares it with the Austrian views about spontaneous arising of economic order from the chaos at the center of gravity of the market. Indeed, each of these Austrian views, one philosophical and one economic, is illuminated by comparison with the other and recognized as different applications of a common paradigm. Neither Z608 nor Austrian economics are concerned with hidden mechanisms or hidden "essences. Both are, rather, concerned with that which is "always before one's eyes" but which one fails to see because of its "simplicity and familiarity"-namely, the creative chaos of human activities at the true "centre of gravity" of forms of human activities.

REFERENCES

- Ayer, A. J. (1966). Can there be private-language? In G. Pitcher (Ed.), *Wittgenstein: The philosophical investigations* (pp.251-266). Notre Dame: University of Notre Dame Press.
- Beaudreau, B. C. (2011). On the emergence and evolution of economic complexity. *Modern Economy*, 2, 266-278.
- Birner, J., & Zijp, R. (1994). Hayek, co-ordination and evolution: His legacy in philosophy, politics, economics and the history of ideas. London/New York: Routledge.
- Callahan, G. (2004). *Economics for real people*. Seattle: CreateSpace.
- Davies, M. (1991). Concepts, connectionism, and the language of thought. In R. S. Rummelhart (Ed.), *Philosophy and connectionist theory* (pp.229-257). Hillsdale: Lawrence_ Erlbaum.
- Dennett, D. (1996). The intentional stance. Cambridge: MIT.
- Faggini, M., & Parziale, A. (2012). The failure of economic theory: Lessons from chaos theory. *Modern Economy*, 3, 1-10.
- Friedman, M. (1990). Free to choose. Boston: Mariner.
- Friedman, M. (1993). The "plucking model" of business fluctuations revisited. *Economic Inquiry*, *31*(2), 171-177.
- Friedman, M. (1994). *Discussion of Hayek's road to serfdom*. Retrieved from URL: http://thedailyhatch.org/2012/07/31/ milton-and-rose-friedman-two-lucky-people/
- Garrison, R. (1996). Friedman's plucking model. *Economic Inquiry*, *34*(4), 799-802. Retrieved from URL: http://www. auburn.edu/~garriro/fm1pluck.htm

- Gleick, J. (1998). Chaos: The amazing science of the unpredictable. New York, NY: Vintage.
- Gordon, D. (2000). *An introduction to economic reasoning*. Atlanta: Mises Institute.
- Haller, R. (1988). *Questions on Wittgenstein*. New York, NY: Routledge.
- Hark, T. (1995). Electric brainfields and memory traces: Wittgenstein and gestalt psychology. Philosophical Investigations, 18(2), 113-138.
- Harris, H. (2002). *Things come to life: Spontaneous generation revisited*. Oxford: Oxford University Press.
- Harvey, D. (2005). A brief history of neoliberalism. Oxford: Oxford University Press.
- Hayek, F. A. (1945). The use of knowledge in society. *American Economic Review*, 35(4), 519-530.
- Hayek, F. A. (1955). *The counter-revolution of science: Studies* on the abuse of reason. New York, NY: Free Press.
- Hayek, F. A. (1976). Law, legislation and liberty: The mirage of social justice. Chicago: University of Chicago Press.
- Hayek, F. A. (1991). *The fatal conceit: The errors of socialism*. Chicago: University of Chicago Press.
- Hayek, F. A. (1996). *Individualism and the economic order*. Chicago: University of Chicago Press.
- Hayek, F. A. (2011a). Lecture on evolution & spontaneous order in 1983 (33rd Meeting Nobel Laureates at Lindau). Retrieved from URL: http://studiesinemergentorder.org/2011/05/14/ hayek-on-spontaneous-order-and-evolution/
- Hayek, F. A. (2011b). *The constitution of liberty*. Chicago: University of Chicago Press.
- Heaton, J. (2000). *Wittgenstein and psychoanalysis*. New York, NY: Totem.
- Hesiod. (2009). *Theogony and works and days*. In West (Trans.). Oxford: Oxford World Classics.
- Kripke, S. (1982). *Wittgenstein on rules and private language*. Cambridge: Harvard.
- Kuhn, T. (1970). The structure of scientific revolutions. Chicago: University of Chicago Press.
- Kurrild-Klitgaard, P. (2003). The viennese connection: Alfred Schutz and the Austrian school. *Quarterly Journal of Austrian Economics*, 6(2), 35-67. Retrieved from URL: http://mises.org/document/1258/The-Viennese-Connection-Alfred-Schutz-and-the-Austrian-School
- Litschka, M., & Grechenig, K. (2010). Law by human intent or evolution? Some remarks on the Austrian school of economics' role in the development of law and economics. *European Journal of Law and Economics*, 29(10), 57-79.
- Malcolm, N. (1997). *Wittgenstein: From a religious point of view?* New York, NY: Routledge.
- Malcolm, N. (1986). Nothing is hidden. Oxford: Blackwell.
- McDonough, R. (2004). Wittgenstein, German organicism, chaos and the centre of life. *Journal of the History of Philosophy*, 42(3), 297–326.
- McDonough, R. (1989). Towards a non-mechanistic theory of meaning. *Mind*, 98(389), 1-21.

¹⁷ This Austrian paradigm can also be applied to ethics, sociology, political theory, etc., but this must be left for another occasion.

¹⁸ Recall that Z608 positively *affirms* the existence of a "System" of impulses connecting brain and behaviour (§ I)!

- McDonough, R. (2013). The religious-cosmological reading of *Zettel* 608. *Sophia Springer*, 52(2), 259-279.
- McDonough, R. (2014a). Wittgenstein's Zettel 608 from a religious point of view: An analogy with martin buber. *Iyyun, 63,* 259-288.
- McDonough, R. (2014b). Heidegger's *Ereignis* and Wittgenstein on the genesis of language. *Open Journal of Philosophy*, 4(3), 416-431.
- McGinn, C. (1984). Wittgenstein on meaning. Oxford: Blackwell.
- Menger, K. (1928). Dimensionstheorie. Leipzig/Berlin: Teubner.
- Miller, H. L. Jr. (1962). On the "Chicago school of economics". *The Journal of Political Economy*, 70(1), 64-69.
- Mises, L. (2003). *Epistemological problems of economics*. In Resiman (Trans.). New York, NY: NYU Press. Retrieved from URL: http://mises.org/books/epistemological.pdf
- Mises, L. (1996). *Human action*. Irvington: Foundation for Economic Education. URL: http://www.mises.org/ page/1470/Human Action
- Monk, R. (1990). Ludwig Wittgenstein: The duty of genius. New York, NY: Penguin.
- Nove, A. (1992). *The economics of feasible socialism revisited*. London: Routledge.
- Quine, W. V. (1960). Word and object. Cambridge: MIT.
- Rockwell, L. (2014). Against the state: An anarcho-capitalist manifesto. Auburn: Rockwell Communication.
- Sellars, W. (1991). Empiricism and the philosophy of mind. *Science, perception and reality* (pp.127-196). Atascadero: Ridgeview.
- Skarbek, D. (2009). F. A. Hayek's influence on Nobel Prize winners. *Review of Austrian Economics*, 22(10), 109.
- Smith, A. (2013). The wealth of nations. Project Gutenberg. Retrieved from URL: http://www.gutenberg.org/ files/3300/3300-h/3300-h.htm

- Smith, B. (1996). *Austrian philosophy: The legacy of franz brentano*. Chicago/LaSalle: Open Court.
- Toulmin, S., & Janik, A. (1972). *Wittgenstein's Vienna*. New York, NY: Simon and Schuster.
- Traupman, J. (1991). *German & English dictionary*. New York/ London: Bantam.
- Wagner, R. E. (2010). *Mind, society and action*. New York/ London: Routledge.
- Waismann, F. (2012). *Introduction to mathematical thinking*. New York, NY: Dover.
- Wittgenstein, L. (1958). *Philosophical investigations (2nd ed.)*. In Anscombe (Trans.). Oxford: Blackwell.
- Wittgenstein, L. (1970). Zettel. In Anscombe (Trans.). Berkeley: University of California Press.
- Wittgenstein, L. (1972b). *On certainty*. In Paul & Anscombe (Trans.). New York, NY: Harper.
- Wittgenstein, L. (1961). *Tractatus-logico-philosophicus*. In Pears & McGuiness (Trans.). London: Routledge Kegan Paul.
- Wittgenstein, L. (1969). *Notebooks, 191416*. In Anscombe (Trans.). New York, NY: Harper and Row.
- Wittgenstein, L. (1972a). *Remarks on the foundations of mathematics*. In Anscombe (Trans.). Cambridge: MIT.
- Wittgenstein, L. (1980). *Culture and value*. In Winch (Trans.). Chicago: University of Chicago Press.
- Wozinski, J. (2010, October). Hayek and the departure from praexology. *Journal of Libertarian Scholarship*. Retrieved from URL: http://libertarianpapers.org/article/24-wozinskihayek-and-departure-from-praxeology/
- Yami, H. (2005). Behaviourism and psychologism: Why block's argument against behaviorism is unsound. *Philosophical Psychology*, 18(2), 179-286.