Organon F 25 (1) 2018: 100-119

Grundprobleme, or Popper Meets Kant

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ABSTRACT: First part of the text presents a historical excursion searching for the genesis of Popper's philosophical views in the interwar Vienna. It analyzes the actual writing process and circumstances that surrounded Popper's work on *Die beiden Grundprobleme der Erkenntnistheorie*. The aim of this section is to evaluate Popper's reception and intellectual self-development through the denial of logical positivism. The second "internalist" segment of this article further examines the *Grundprobleme* itself through the analysis of Popper's specific interpretation of Kant's transcendental idealism. We will confront Seubert's claim that through *Die beiden Grundprobleme der Erkenntnistheorie* Popper definitely and knowingly accepts Kant's stance. We show that even though Popper adopted Kant's transcendental method of questioning, he had later criticized certain aspects of Kant's transcendental method. As a result, Popper establishes the so called genetic apriorism, which dwells on his own version of the deductive psychology of knowledge.

KEYWORDS: Epistemology – i*nt*erwar Vienna – *Immanuel Kant* – Karl Popper – logical p*ositivism* – n*eopositivism*

[1] Received: 28 September 2017 / Accepted: 28 december 2017

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1. Externalist perspective: genesis of the views of Karl Popper

Despite the increasingly widespread perception of Popper as an intellectual solitaire, we present a different picture of the thinker. This insight could be seen while we look into an early stage of Popper's thought-forming process. Moural (1997, 50) notes that "it does not hurt to take seriously that Popper was self-taught in philosophy – he was perhaps the last great autodidact at the history of philosophy." That is also why it is not easy to find one decisive element in Popper's intellectual development that would mark the turn from his philosophically mature thinking towards a "recognizably Popperian Popper" (Naraniecki 2014, 45) whom we know today. Similarly, it is difficult to identify a particular philosopher that would help us to better understand the genesis of Popper's ideas through the prism of its work.

All scholars who study Popper's early work, however, agree that an essential key to decrypt his intellectual development lies in a work *Die beiden Grundprobleme der Erkenntnistheorie*.[2]

1.1. Two problems surrounding the publication of Grundprobleme

Until the publication of *The Logic of Scientific Discovery* in 1935 the only available bits of information about Popper's ideas were available either through his personal contact with Viennese philosophers, or through comments published in the magazine of logical positivism *Erkenntnis*. Popper's methodological breakthrough reached on the pages of *Grundprobleme* was thus largely unknown to broader philosophical circles.

In December 1932 Carnap publishes a brief report on Popper's manuscript in *Erkenntnis* in the article *Über Protokollsätze* (Carnap 1932). He supports in it Popper's deductive model of theory testing, while expressing the hope that *Grundprobleme* is soon going to be published. Nothing like that does happen though, and a discussion surrounding Popper's work takes place only in a narrow circle of "insiders". Hacohen describes these events in detail while he also mentions a conflict about intellectual priority that

[2] Let us mention that the German title of his work (*Die beiden Grundprobleme der Erkenntnistheorie*) is an indirect allusion to Schopenhauer's book *Die beiden Grundprobleme der Ethik*.

arose between Popper and Neurath in the case of non-foundationalism: "His originality and independence were at stake. […] He asked Carnap to emphasize his independence, and Carnap agreed" (Hacohen 2002, 218). One of the tangible results of Carnap's assistance is that, in 1933, *Erkenntnis* publishes a most succinct excerpt of the whole book, a summarizing two page report (Popper 1933, 426-427). Carnap's gesture, however, failed to satisfy Popper.

Grundprobleme did not make it to print (in the originally intended seven hundred pages long release) any sooner than in 1978 through its German edition. Many misconceptions associated with Popper's work may thus have its basis in the lack of contextual understanding of the specific problem situation of the Viennese interwar philosophy. The English edition of *Grundprobleme* occurs in 2008, long after Popper's death. On a more positive note, its belated publication helped to bring a new wave of interest in Popper's work. The English version of the book now represents a strong impulse to reopen discussion on topic of an early Popperian philosophy.

Popper was well aware that, in order to build an international reputation, he must hold a close relationship with the most discussed philosophical movement of his epoch, the logical positivism. Popper himself never was a member of this philosophical movement – at least in a classic conception of this school of thought, broadly defined by its identification with the Vienna Circle and with attending Schlick's seminars.[3] Despite the fact that both Popper and logical positivists discussed the same philosophical questions, each of them ended up with a completely different outcome.

On a philosophical level, Popper is an anti-inductivist, anti-verificationist and he is also against the cumulative approach to science. Beside that he does not curse metaphysics for its worthlessness. Despite these differences regarding scientific method, some members of the Vienna Circle (as well as other philosophical contemporaries) regarded Popper as an heir to Viennese analytic tradition.

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[3] Popper did not receive a personal invitation to visit Schlick's seminars (see Hacohen 2002, 188-190).

1.2. The myth of Popper the neo-positivist

We claim that an origin of the *myth of Popper the neo-positivist* had been affected by three major events. First being Popper's forced immigration to New Zealand and a resulting separation from "philosophical venues" of Europe; a fifty years delay in *Grundprobleme*'s publication constitutes another important factor while the last impact was caused by another postponement, this time a twenty-five years long waiting for the English translation of the *Logic of Scientific Discovery*.[4] It is these actualities that collectively brought up a rift in the conceptualization of Popper by the upcoming generation of philosophers and gave an impulse to his inclusion in the neo-positivist school of thought.

On the other side, we should not completely ignore that some form of cooperation undoubtedly prevailed between Popper and members of the Vienna Circle. Despite their criticism, at least some of the members of the inner circle proved to be intellectually open towards Popper's ideas. Especially Carnap, a prominent philosopher in Viennese analytic tradition, often assisted Popper on his path towards broader recognition. Naraniecki (2000, 514) points out a following fact:

> Through Popper's private correspondence we get a remarkably different picture of his relationship to the members of the Circle. As the Vienna Circle constituted the pre-eminent philosophical school in Austria, Popper was invariably drawn towards them. He formed life-long intellectual relationships as well as close friendships with members of this group.

However not all members of the circle were supportive to a famously-eccentric Popper.

According to Hacohen, when Popper first met Moritz Schlick, it was a complete disaster:

> Popper gave a lecture to the Gomperz circle at which Schlick, Carnap, Kraft, and other circle members were present. Popper was nervous, and

[4] The specifics of Popper's stay at New Zealand can of course be also applied to the above mentioned problem that presents a mistaken identification of Popper as a logical positivist.

> this brought out the worst in him. He targeted Wittgenstein for criticism and, during the discussion, confronted Schlick. Wittgenstein, he told Schlick, was a dogmatist. Like the Catholic Church, he prohibited discussion of philosophical problems that he could not solve, declaring them nonexistent. Schlick left angrily in the middle of the discussion. He told Carnap later that Popper had misinterpreted Wittgenstein, and there was nothing new in his paper. (Hacohen 2002, 219)

Popper thus finds himself standing on the edge of an abyss, as his road to academic success leads both through the denial of fundamental theses of neo-positivism as well as through the close contact with members of the Vienna Circle – the proponents of the doctrine whose principles Popper so strongly criticized.

In the first part of *Grundprobleme* Popper expresses some *comments on the relationship of the book to the current theory of knowledge*:

> On account of its formulation of the problem and its method, which is oriented towards natural sciences, the book is close to modern ('logically' oriented) '*positivism*' (Bertrand Russell, Moritz Schlick, Philipp Frank, Rudolf Carnap, Hans Reichenbach and Ludwig Wittgenstein). Yet for this very reason, it devotes its most detailed *criticism* to this movement, and it attempts to expose the 'fundamental contradiction of positivism' through which this philosophy fails. (Popper 2008, xxxiii-xxxiv)

Popper is thus a victim of a following dilemma: he does not know whether the philosophical destruction of neo-positivism will not endanger his current ties to many of its supporters. Hence, it is their positive evaluation that he will soon need for thanks to political development in Europe. Let us now focus in more detail on the critique of logical positivism present on the pages of *Grundprobleme.*

1.3. The centerpiece problems of Grundprobleme *and their current reception*

Through the philosophically challenging text of *Grundprobleme* Popper presents his ideas concerning neo-positivism and its representatives.

Two problems which Popper deemed crucial with respect to a possibility of any further development in epistemology were the problem of induction and the problem of demarcation. The first issue is largely associated with questions that have been already sketched by Hume, namely to what extent can we legitimately use our experience to predict future events. The second one can be traced back to Kant and reflects a problem of demarcation of science from metaphysics and pseudo-science.

Hacohen (2002, 196) offers an explanation that these two fundamental problems originally started as one, the problem of induction. "Popper intended to follow Gomperz's model of a 'dialectical critique': a critique exposing internal contradictions in the positivist views of induction, and leading to his own solution." It is the final part of Hacohen's comment which highlights the fundamental problem of Popper's manuscript. The competitive "disadvantage" of *Grundprobleme* is hidden in the very length (and exceptionally difficult readability) of the text itself, which could not be, as we mentioned above, published for its bulkiness.

Even though Popper was never a neo-positivist, he still shared many neo-Kantian tendencies with members of the Vienna Circle. In the early thirties of the 20th century, Kant's work enjoyed a great popularity in both philosophical and scientific circles. At the same time, many of Kant's conclusions did not seem nearly as obsolete as in 1979. We mention these circumstances only to put further emphasis on the fact that thanks to a failed attempt to publish *Grundprobleme* in 1933, the work lost a great part of its potential popularity.

For its overly sophisticated argumentative structure *Grundprobleme* cannot speak clearly to many of its readers by the time of their publication. Moreover, Popper does not enjoy much popularity today in analytic philosophy, but it is paradoxically exactly in these circles where the complicated terminology of *Grundprobleme* could be best understood. Furthermore, the main issues that Popper addressed in *Grundprobleme* – Kant-Fries' problem, Dingler's conventionalism, as well as critiques of the philosophies of Selz and Buhler – were already loosing on popularity back in 1930's, but even worse, fifty years later those discussion lost almost all importance whatsoever to all but the small group of historiographers of the philosophy of science.

2. Internalist perspective: Popper's reinterpretation of Kant

This part of the study introduces Popper's early theory of knowledge as was constituted by Popper in *Grundprobleme*. We focus on the internalist analysis of classical philosophical approaches (classical rationalism and empiricism as well as Kant's transcendental idealism), that could be traced as sources of influence for young Popper. We aim to show that Popper approached the philosophies in question in a very critical manner.

It is almost unbelievable how high levelled are the philosophical arguments of barely thirty years old Popper. As his explicit disagreement with neo-positivism is usually well known thanks to *The Logic of Scientific Discovery*, we will hereby focus on another subject: his critical approach towards Kant. Seubert (2016, 8) argues that "Popper definitely and deliberately reveals the acceptance of Kant's position." We will show, however, that this acceptance is indeed critical and brings Kant's apriorism to its new consequences.

2.1. The synthesis of rationalist and empiricist elements

Popper refers to his theory of knowledge as the *deductivist-empiricism*. He bases his theory on two fundamental assumptions:

1. Deductivism: an assumption that all scientific methods of justification are based on strictly logical deduction. Deduction is applied here to *all* scientific justifications (Popper uses no exceptions) while it completely ignores any traces of the inductive method. He explicitly writes:

   > The view advanced here may be called radical 'deductivism'. It holds that all scientific methods of justification are, without exception, based on strictly logical deduction, and that there is no induction of any sort qua scientific method. (Popper 2008, 8)

   For Popper, the deductive inference as it is used in science is based on modus tollens. His position on this issue is explained in the *Grundprobleme* (Popper 2008, 8) in detail:

   > The only admissible inferences in an inductive direction – that is, proceeding from a theory's minor premises to its major premises – are the deductive inferences of the modus tollens, the falsification

of major premises by way of falsifying the conclusions deducted from them.

Popper's methodology could thus be traced back to his deductivism.[5]

2. Empiricism: a proposition that the truth or falsity of specific matters of facts could only be decided on the basis of (our) experience. This statement literally represents "the fundamental thesis of empiricism" for Popper *(Grundthese des Empirismus*): "Only experience can decide the truth or falsity of an empirical statement"[6] (Popper 2008, 8). In Popper's philosophical system empiricism is associated with the so-called *one-sided falsifiability*. It means that while scientific theories (as general statements about reality) cannot ever be definitively verified, they can still be falsified.[7]

When Popper writes about his *deductivist-empiricism*, he literally describes it as "a synthesis of two classical theories of knowledge" – rationalism and empiricism. According to Popper, classical rationalism is characterized by its deductivist consequences. It enables us to deductively derive single statements from rationally (*a priori*) knowable universal laws of natural sciences. Classical empiricism represents the opposite position together with its inductivist consequences, as the truth of each statement is derived from experience (*a posteriori*).

Popper claims that the dispute between rationalism and empiricism concerns a question of the validity of statements about reality. It is the classic question that asks whether *there are any synthetic a priori judgments*. Popper formulates this in his own words: "Is there any ground of validity for

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[5] When we evaluate this deductivist assumption of Popper, we shall keep in mind that we comment here on the work of "early Popper", who is more dogmatic than "classical" Popper, which we know well from his later texts. Later Popper is certain to say that there is no method of justification, but of criticism, and this method is, admittedly, a deductive one. However, if we look in the *Grundprobleme*, Popper's former position (as we have tried to show) differed significantly.

[6] Popper considers the basic thesis of empiricism and the fundamental transcendental thesis as analogical (see Popper 2008, 62).

[7] In *The Logic of Scientific Discovery* Popper calls this aspect the Asymmetry between *Falsification* and *Verification*.

non-logical statements other than experience" (Popper 2008, 15)? Rationalism gives a positive answer to this question, but because it does not refer to logic as the basis of validity it must either give up any such foundation or provide a different a priori basis of validity. Popper believes that, for rationalism, this foundation could be *evidence*. Empiricism answers the aforementioned question in the negative, because in addition to logic as the basis of validity for analytical statements, it does not provide any other sources of validity than the empirical verification. Popper (2008, 16) proposes a following solution:

> The fundamental *rationalist* idea – there are *a priori* synthetic judgments – can be separated from the idea of *deductivism* with which it is connected, and that these two ideas are by no means logically tied to each other; in the same way, inductivism may be separated from the fundamental thesis of empiricism.

Popper understands his *deductivist-empiricist* view as a special connection between rationalist focus on *axiomatic-deductivist systems* of geometry and a primordial empirical hypothesis that these systems (if they are applicable onto reality) could be decided only by means of our *experience*. The existence of synthetic a priori statements and of inductive inferences is therefore excluded from Popper's epistemology.

2.2. Popper's transcendentalism

In *Grundprobleme*, Popper refers to his theory of knowledge as to *transcendentalism* with an explicit reference to Kant. Since transcendentalism is based on the so-called methodological or transcendental method, he says:

> The term 'transcendentalism' will denote the view that epistemological assertions and concepts can and must be critically examined – exclusively – in terms of the actual justification procedure of the empirical sciences. (Popper 2008, 7)[8]

[8] This statement clearly shows Popper's (demarcation) accent on "empirical science", which is further raised in an even more uncompromising form in his *Logic*.

This means that the theory of knowledge is not an "individual" empirical science but it is a strictly *theoretical science* that relates to empirical sciences in the same way as are empirical sciences related to our experiential reality. Popper explicitly means that just as empirical science gives us the rules to understand reality, then analogically, the theory of knowledge should provide certain principles for understanding empirical science.[9] Put simply, theory of knowledge provides theoretical principles, by which empirical science realizes its processes. Popper specifically writes (Popper 2008, 7): "The theory of knowledge is a science of science. [...] The transcendental method is an analogue of the empirical method."[10]

Popper characterizes his unique method of research as a general critique of all problem-solving epistemological attempts. Any given criticism is thus focused on finding *contradictions*. Popper further distinguishes between different methods of criticism: there is an example of *a logical method* that seeks "internal" contradictions in the assertions themselves, or we can use *an empirical method* which is supposed to demonstrate "external" contradictions with the facts and experience (see Popper 2008, 57). But the crucial question for Popper is: "*Is there a specifically epistemological method?*" Popper's answer is affirmative with a remark that we can count as sufficient Kant's transcendental methods:

> Kant was the first who saw this problem. What is alluded to here by the phrase 'specifically epistemological', in Kant's terminology would have to be rendered by the term 'transcendental'. (Popper 2008, 60)

But even then Popper (2008, 60) has his reservations towards Kant:

> It has often been doubted that there is another procedure of immanent criticism in addition to the logical and the empirical testing procedures;

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[9] Later on, Popper mentions in *Grundprobleme*: "That the theoretical natural sciences exist is a fact. It is the task of the theory of knowledge not to doubt this fact, but rather to explain it" (Popper 2008, 64).

[10] However, we should also acknowledge, that according to Popper, theory of knowledge is not falsifiable; therefore, it is not a theoretical empirical science as it cannot relate to our experiential reality. In other words, the questions of theory of knowledge cannot be answered by experience or experiment.

> for while Kant's definition of the *task* of his 'transcendental method' is quite unequivocal, his *solution* of this task, and the more concrete description of the transcendental *procedure itself*, are often rather abstruse and contradictory.

We will mention Popper's critique of Kant's transcendental method (i.e., the transcendental deduction) later, but let us already state that its sole role lies in the fact that the theory of knowledge has to "present a bill" (*Rechnung zu tragen*) to the actual methods of natural sciences. On that basis, Popper completes his initial claim and formulates the so called "fundamental transcendental thesis" (*transzendentale Grundthese*):

> Epistemological assertions and definitions must be critically examined in the light of the actual procedure of justification employed by the empirical sciences; and only this – transcendental – examination can determine the fate of such assertions. (Popper 2008, 62)

2.3. Popper's involvement in Kantian philosophy

Kant's theory of knowledge (i.e., transcendental idealism) is recognized by Popper as the first attempt at a synthesis between classical contradictions of rationalism and empiricism. Kant grasps *the formal aspect* of knowledge by overtaking some elements of rationalism while *the material aspect* is reached through empiricist elements. The central part of Kant's *Critique of Pure Reason* consists of a so-called *Transcendental Analytics* that is regarded by Popper as an elaboration of the problem of induction (in the form of Hume's infamous problem).[11] Kant's transcendental deduction represents for Popper a real solution to the logical aspect of Hume's famous problem, that general statements about reality cannot be drawn from experience. Kant's work "proves" an existence of synthetic a priori judgements on a basis of general formal presuppositions of all material experience. Popper adds to this:

> The success of the 'transcendental deduction' depends on the proof that all experience, even singular empirical statements, and thus all

[11] Kant's transcendental dialectic is deemed by Popper as an elaboration on the problem of demarcation.

> knowledge of reality, are made possible only by specific presuppositions, and that these presuppositions are of the same type as principles of induction; this means, however, that these presuppositions are statements about law-like regularities.[12] (Popper 2008, 68)

It was Kant's discovery that all knowledge of reality is made possible only by specific presuppositions which are statements about law-like regularities. And it is exactly this point that has become essential to Popper's theory of knowledge. However, Popper rejects the "synthetic turnover" (i.e., Kant's formal apriorism that reminds Popper of an old dogmatic reminiscence of traditional rationalism) and it is by these conclusions how Popper later discovers the whole new angle for Kant's critique. The justification of transcendental idealism through the results of transcendental deduction is extremely problematic for Popper. He thinks that Kant made an error because while he was deriving transcendental idealism from transcendental deduction, he confused psychological problems with epistemological ones. Popper claims: "In carrying out the 'transcendental deduction', Kant employs both psychological and – in our sense – transcendental arguments … in order to establish the formal components of all knowledge" (Popper 2008, 68). For Popper, transcendentalism means the above-mentioned methodological method, or science of science, which critically examines – in Kant's terminology – the conditions of scientific method and scientific knowledge as such.

Popper criticizes Kant's transcendental idealism, which relates these conditions to 1) unconceivable (transcendentally ideal) "thing-in-itself" and also to 2) synthetic a priori cognitions, whose apodictic certainty Kant proves through the so-called transcendental deduction of categories. Popper, however, considers this type of deduction as circular: the assurance of synthetic cognition a priori is derived from the existence of pure a priori forms of knowledge, on the basis of which Kant derives pure a priori concepts (i.e., categories) through transcendental deduction. And it is these categories what guarantees the certainty of those synthetic a priori judgments.

Popper further argues that Kant's transcendental deduction is also uncritical (see Popper 2008, 72). While examining the theory of knowledge,

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[12] Popper refers to Kant (Kant 1998, B257-262).

Popper really takes into account the results of empirical sciences. In contrast, Kant primarily focuses on such forms of cognition, which are yet to determine the empirical. To sum up: all experience is conditional for Kant. It is thus completely formed by a priori forms of cognition that are 1) pure (i.e. not empirical), 2) the grounds of all empirical experience (e.g. the conditions of the possibility of appearances), 3) apodictic certain, so therefore they are based on the "logic of truth", respectively on the laws of nature.[13]

2.4. The initial Kantian question

How is it possible for certain subjective conditions to be objectively valid? That is the central question for Kant. We can also rephrase it as follows: "How can these subjective conditions at the same time be the most general laws of nature" (Popper 2008, 89)? Popper's answer here is largely dependent on his explanation of the agreement of any knowledge with its object. This explanation has the following three options for Popper:

1. Our knowledge is determined by its object.
2. The object is determined by our knowledge.
3. *Mittelweg*: We have knowledge as an inborn disposition that is *performed* such that it agrees with its object (see Popper 2008, 90).[14]

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[13] See Kant (1998, B38-B39).

[14] For additional explanation of Kant's position, see Kant (1998, B166-169): "This cognition, which is limited merely to objects of experience, is not on that account all borrowed from experience; rather, with regard to the pure intuitions as well as the pure concepts of the understanding, there are elements of cognition that are to be encountered in us a priori. Now there are only two ways in which a necessary agreement of experience with the concepts of its objects can be thought: either the experience makes these concepts possible or these concepts make the experience possible. The first is not the case with the categories (nor with pure sensible intuition); for they are a priori concepts, hence independent of experience (the assertion of an empirical origin would be a sort of generatio aequivoca). Consequently only the second way remains (as it were a system of the epigenesis of pure reason): namely that the categories contain the grounds of the possibility of all experience in general from the side of the understanding. ... If someone still wanted to propose a middle way between the only two, already named ways, namely, that the categories were neither self thought a priori first principles a of our cognition

Kant (2001, §36) chooses the second option, namely that the "understanding does not derive its laws (a priori) from, but prescribes them to nature". Popper considers this to be the core statement of transcendental idealism. However, according to him, Kantian doctrine on the subjectivity of the laws of nature can be justified neither by the doctrine of the subjectivity of form of appearances nor by the antinomy doctrine as we can find it in Kant. Such reasoning is considered by Popper a typical example of the confusion between epistemological and genetic (or psychological) aspects of knowledge. As we shall see below, Popper draws a strict distinction between these two positions.[15]

Later in *Grundprobleme*, Popper asks: "How can agreements of the (subjective) conditions of possible experience with (objective) laws of nature be explained"? (Popper 2008, 92) Popper aims to answer this question solely from genetic and psychological perspectives. He further adds:

> Any attempt to explain that we can really have knowledge – lies beyond the scope of science (it is 'metaphysical'). It does not matter if, like Kant, one looks for the basis of explanation in us – in the properties of our understanding, which prescribes laws to nature – or perhaps in the general properties of the world. (Popper 2008, 93)

We are thus acquainted with the properties of our world (including our own reason) exclusively through the natural laws that we seek by means of the methods of natural sciences.

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nor drawn from experience, but were rather subjective predispositions for thinking, implanted in us along with our existence by our author in such a way that their use would agree exactly with the laws of nature along which experience runs (a kind of prefonnation-system of pure reason), then ... this would be decisive against the supposed middle way: that in such a case the categories would lack the necessity that is essential to their concept."

[15] Not only Naraniecki (2014, 65) refers to "the distinction between epistemology and psychological experience of knowledge" as to the central aspect of Popper's revision of Kant. Wettersten also speaks of "intimate" relationship between methodology and psychology at Popper (see Wettersten 1990, 303).

2.5. Popper's genetic apriorism

Popper argues that the original Kantian question ("how can subjective conditions immediately create the general laws of nature") cannot be answered on the basis of the theory of knowledge, but it should be interpreted from *genetically-biological point of view*. Namely as a question of "how can the agreement of the (subjective) conditions of our cognitive apparatus – of the laws governing the function of our mind – with the (objective) conditions of our environment be explained" (Popper 2008, 94). As a result, Popper formulates a general biological question of the adaptation of living organisms to objective conditions of their surroundings.

Popper affirms the fact that we – as humans – are searching for regularities in every aspect of the outer world that surrounds us. For Popper, this statement presents a basic condition for our intellectual adaptation (a human *a priori preformation*): "Only the existence of this basic intellectual function, namely the searching for regularities, makes possible the process of intellectual adaptation (cognition)" (Popper 2008, 95). Afterwards he explains a biologically proven (this always means a clear a priori sign for Popper) fact that we are able to reason through (or by means of) hypothesis and that we gathered these "reasoning functions" through our sheer adaptation to reality.

Kant's inquiry into the agreement between our intellect and relations in the world is interpreted by Popper as a purely biological question of genetic adaptation. Popper's approach can be described as *genetic apriorism* since the basic intellectual functions are innate to us. Out of the three previously mentioned options, Popper favours the third one (*Mittelweg*). In connection with this Popper distinguishes between external and internal conditions: The World as our environment (*Umwelt*) can be regarded as the embodiment of biologically relevant *external conditions*. However, what is biologically relevant and how it is relevant depends largely on *internal conditions*. These *internal factors* should help to illustrate the fact that our knowledge is anthropomorphic (see Popper 2008, 97).[16]

[16] The topic is further explained by Kant himself: "A middle course may be proposed between the two above mentioned, namely, that the categories are neither self-thought first principles a priori of our knowledge nor derived from experience, but subjective dispositions of thought, implanted in us from the first moment of our existence, and so ordered by our Creator that their employment is in complete harmony with the laws of

2.6. The problem of anthropomorphism and apriorism

Popper always claimed that *anthropomorphism* has an essential place in Kant's theory of knowledge, because the doctrine of transcendental idealism and the notion of *ding an sich* can be understood (from a biological standpoint) as a fact that, as humans, we cannot overcome anthropomorphic limits of our understanding and knowledge at all. From the epistemological perspective, however, Popper calls this *a problem of anthropomorphism* (or *a problem of subjectivity of our knowledge*), which he describes as "banal rather than subtle" (Popper 2008, 97).

Kant's optimistic epistemological viewpoint[17] is seen as untenable by Popper. Furthermore he considers Kant's apriorism entangled in many inner contradictions. As to the circular argumentation, Popper refers especially to Kant's concern with the apriority of the principle of induction which justifies the "necessary existence" of general laws of nature through the thesis that these laws are prescribed to nature through our own understanding. Popper hence argues that transcendental idealism can only explain the psychological apriorism of natural laws, not their epistemological priority.

2.7. Deductive psychology of knowledge

The deductive psychology of knowledge (which stands right beside the deductive epistemology) represents for Popper an alternative examination of the emergence of knowledge in the biological and psychological sense.[18] Popper talks in this context about the so-called *genetic deductivism*. According to him, our thoughts must be characterized as a series of

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nature in accordance with which experience proceeds – a kind of preformation-system of pure reason. Apart, however, from the objection that on such a hypothesis we can set no limit to the assumption of predetermined dispositions to future judgments, there is this decisive objection against the suggested middle course, that the necessity of the categories, which belongs to their very conception, would then have to be sacrificed" (Kant 1998, B167-168).

[17] This viewpoint is described as one that compensates necessary anthropomorphic limitations of our knowledge by a priori valid synthetic views.

[18] Popper draws his inspiration here partly from Fries' psychological interpretation of Kant. Naraniecki (2014, 52) summarizes it as follows: "Fries' acceptance of psychologism remained unsatisfactory for Popper as this psychological revision of Kant merely deferred

intellectual responses that are subjectively preformed. But how to explain that reactions that are subjectively preformed and therefore do not come from experience – those ones that have been found in objective situations of the external world – show themselves as biologically valuable? Popper refers to these subjectively preformed reactions as our *anticipation* and argues:

> According to the deductivist view, we do not attain our empirical knowledge by abstraction or generalization from sense-perceptions, but by trying out anticipations tentatively assigned to the 'material' of the receptions. Whether this tentative assignment will be abandoned or not is decided by its biological value. The method of deciding is a selective one. […] Success in the environment determines the fate of preformed anticipations. (Popper 2008, 28)

Popper admits that *genetic deductivism* cannot explain the creation of new anticipations. For Popper, there is no inevitable or rational path that would lead from new receptions to new reactions. It is a system based on selection, more precisely on a "method of Trial and Error" (Popper 2008, 29).

According to Popper, it is possible to understand the term "a priori" in a psychological sense as *something that does not arise from experience*. Psychological use of this term is synonymous with (the already mentioned term) *anticipations*. These can therefore be understood as synthetic a priori judgments: "But these 'a priori synthetic judgments' would be only tentative anticipations, they would only exist *a priori*, that is, prior to being empirically corroborated; *a posteriori* they could still be rejected, refuted by experience" (Popper 2008, 33).

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lawfulness from Kant's consciousness (*Verstandesgesetzlichkeit*) to psychology, thus accomplishing nothing. Like the rest of science for Popper, epistemology required some means of its acceptance over competing theories even if we cannot ultimately justify such theories." Naraniecki considers this as a proof of Popper's epistemological and methodological non-foundationalism (see Naraniecki 2014, 52).

3. Summary

Based on an externalist approach, the first part of our study explains the circumstances of the origin of Popper's first major work. We have showed that the interactions with the members of the Vienna Circle as well as discussions with other notable neo-positivists played an all-important part in the formation of Popper's thinking. Our research has revealed its two concrete consequences:

1. Popper had to clearly distinguish himself from the neo-positivism. This has contributed to formulating of his own authentic position, which is so well known today through its declaration in *The Logic of Scientific Discovery*.

2. His first major treatise, *Die Beiden Grundprobleme der Erkenntnistheorie* – whose core consisted in a confrontation with 18th and 19th centuries epistemologies – did not see the light of day. In addition to its difficult readability and bulkiness, there was the fact that traditional theories of knowledge were considered an absurd metaphysics by neo-positivists.

The publication of Popper's work is thus postponed for another fifty years. The majority of the text of *Grundprobleme* is almost completely abandoned by Popper when he publishes *The Logic of Scientific Discovery* and "Hume's" or "Kant's" problems are mentioned only briefly, with no deeper explanation.

In the second part, we showed that Seubert's assertion[19] is somewhat simplified. First, we can track a vast source of Popper's inspiration in the work of Kant. Secondly, we can observe that Popper's approach towards Kant's formal epistemological apriorism is mostly critical. We can see a positive aspect of this inspiration in a significantly Kantian "transcendental questioning" by which Popper builds his very own theory of knowledge and places it on the pedestal of transcendental method. This method examines an intrinsic possibility of empirical science as such, respectively the

[19] Seubert claims that through *Die beiden Grundprobleme der Erkenntnistheorie* Popper "definitely and knowingly accepts Kant's stance" (Seubert 2016, 8).

validity of the laws of nature. Another source of Popperian inspiration is Kant's attempt at a synthesis of classical rationalism and empiricism. Although Popper himself performs a similar synthesis, it does not result in formal apriorism, but in *deductivist-empiricist epistemology*. That consists of two main aspects for Popper: 1) a rationalist method of scientific reasoning (deduction); 2) an empiricist assumption that the veracity or falsity of singular empirical statements can only be decided on the basis of experience.

Moreover this critique is concerned with the fundamental problem that Popper finds in Kant – his advancement from the basis of transcendental deduction towards transcendental idealism. Popper points out that Kant is confusing psychological with epistemological problems and argues that the Kantian question, "how to explain a compliance of (subjective) conditions of experience with (objective) laws of nature?", cannot be answered from the epistemological point of view, but only in genetic and psychological terms. He therefore reinterprets this question with the help of "his" *genetic apriorism* as a purely biological one that concerns genetic adaptation. According to this theory, our basic intellectual functions are inborn and they are *preformed* in a way of human natural adaptation. This innate adaptation represents the so-called internal conditions of our knowledge and leads to the problem of anthropomorphism (the problem of the subjectivity of our knowledge).

On this account, Popper simply says that such anthropomorphic boundaries of our knowledge cannot be overcome. However, from an epistemological perspective, he considers this issue not only a circular one but also unquestionably trivial. A theory of knowledge does not wonder that there is knowledge itself, but seeks only to state its possibilities and limits.

Acknowledgments

This research was supported by Faculty of Philosophy and Arts, The University of West Bohemia (Specific Research Grant: *The Roots of Critical Rationalism, Its Legacy in the Postmodern Discourse and Actual Reflection*, No. SGS-2016-009).

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