Utopias and forms of life: Carnap's Bauhaus conferences

[Utopias e formas de vida: as conferências de Carnap na Bauhaus]

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DOI: http://dx.doi.org/10.21680/1983-2109.2017v24n45ID12650

Natal, v. 24, n. 45
Set.-Dez. 2017, p. 121-148

Princípios
Revista de filosofia
E-ISSN: 1983-2109

Abstract: This paper discusses Rudolf Carnap's 1929 conferences at the Bauhaus school of art, design and architecture in the context of Otto Neurath's utopianism. The conferences enable us to understand Carnap's proposals of logical construction as part of some modernist cultural movements of Central Europe in early 20th Century. Utopias play a significant role in Neurath's philosophy of social science, as they can be compared to models of social technology. Carnap's conferences aim at showing that the Bauhaus shared a world-conception with the Vienna Circle, group of which Carnap and Neurath were members. This paper argues that this common world-conception can be understood as a utopia, as a proposal of intervention in society, and that Carnap's conferences were an invitation to join such utopia. This paper not only performs an exercise of historical reconstruction of philosophy of science, but it also shows reflexions on some problems of social science and technology.

Keywords: Philosophy of the Social Sciences; Values; Vienna Circle; Otto Neurath.

Resumo: Neste artigo se discutem as conferências de Rudolf Carnap, em 1929, na Bauhaus, escola de arte, *design* e arquitetura, no contexto do utopianismo de Otto Neurath. As conferências nos permitem compreender as propostas de Carnap relativas à construção lógica como parte de alguns movimentos culturais modernistas na Europa Central do início do século XX. Utopias desempenham um papel significativo na filosofia das ciências sociais de Neurath, sendo comparáveis a modelos de tecnologia social. As conferências de Carnap objetivam mostrar que a Bauhaus e o Círculo de Viena, grupo de que Carnap e Neurath eram membros, compartilhavam uma concepção de mundo. Argumenta-se neste artigo que essa compartilhada concepção de mundo pode ser entendida como uma utopia, como uma proposta de intervenção na sociedade, e que as conferências de Carnap foram um convite para integração a essa utopia. O artigo não realiza apenas um exercício de reconstrução histórica da filosofia da ciência, mas também apresenta reflexões acerca de alguns problemas de ciências e tecnologias sociais.

Palavras-chave: Filosofia das Ciências Sociais; Valores; Círculo de Viena; Otto Neurath.

This paper is going to discuss a relation between some proposals of the group of philosophers and scientists known as the Vienna Circle. It is well understood that the ideas of that group do not fully agree with one another, they do not form a systematic whole. On the contrary, they form a heterogeneous mosaic of proposals that point towards a common conception of the world, of philosophy and science, as well as of society and politics. Thus, even though it is customary to say that the philosophy of the Vienna Circle is a kind of logical empiricism or logical positivism, one can only find some more or less general convergences among some authors and projects. In this paper, I am going to present some parts of Rudolf Carnap's 1929 conferences at the Bauhaus school of art, design and architecture in a convergence with Otto Neurath's utopianism.

Recent scholarship, as we are going to see, considers that Carnap's Bauhaus conferences offer an opportunity to understand some Vienna Circle ideas in the context of the modernist cultural movements of early 20th Century. I am going to investigate the possibility of understanding another Vienna Circle project in that context, Neurath's philosophy of the social sciences. Beyond the historical reconstruction, my investigation will hopefully bring some suggestions for a contemporary standpoint regarding the philosophical problems of social science.

1. Carnap and Bauhaus

In 1929 Carnap gave four lectures at the Bauhaus school of art, architecture and design in Dessau, Germany. Other logical empiricists, Otto Neurath, Herbert Feigl, and Walter Dubislav, also lectured at the Bauhaus in that year. The shorthand notes of Carnap's lectures survived. In the last decades, some important works have dealt with Carnap's Bauhaus lectures, of which I would like to highlight two. In the first of these, Peter Galison (1990) makes a very thorough comparison of the Bauhaus conceptions of art to the manifold of Vienna Circle's standpoints, in particular

Carnap's, showing the convergence towards a form of modernism. Galison's work goes beyond Carnap's visit to Bauhaus and presents such a convergence in the relationship between logical empiricists and the Bauhaus in the origins and in the further development of both groups. And then, in an effort towards refining Galison's approach, Hans-Joachim Dahms (2004) shows that both Carnap's philosophy and Bauhaus art converge in the cultural movement known as *Neue Sachlichkeit*. This expression, which translates to "new objectivity" or "new matter-of-fact-ness", is associated to a plural movement gathered by art historians Franz Roh and Gustav Hartlaub in some exhibitions in interwar Germany as a reaction to expressionism. The *Neue Sachlichkeit* movement sought to focus, as the name suggests, on *matters of fact*, breaking up with unexamined traditions that dictated ways of construing objects of art.

The central aspect of the common modernism in Bauhaus and Carnap is the emphasis on what Galison calls "'transparent construction', a manifest building up from simple elements to all higher forms that would, by virtue of the systematic constructional program itself, guarantee the exclusion of the decorative, mystical, or metaphysical" (Galison, 1990, p. 710). By means of his comprehensive study, Galison concludes that "the modernist construction of form out of elemental geometric shapes and colors", which is the central proposition of the Bauhaus, "is a correlate of the verbal development of theories out of logic and elementary bits of perception", a well-known mark of Carnap's philosophy (Galison, 1990, p. 749). The modernist similarities between Carnap and Bauhaus are not only in the process of construction, but also in the conception of the role such a construction plays in life: as Galison advances, "logical positivism was in the form of life espoused by the Bauhaus, and the Bauhaus rationalization of the objects around us played a part in the form of life advocated by the logical positivists" (Galison, 1990, p. 749). In Dahms's view, "modernity, to Carnap, evidently [has] a close connection with the *conscious shaping* of life and art as well as cognition and practical affairs, as

opposed to passive drift or unreflected conformity with inherited patterns" (Dahms, 2004, p. 370).

Dahms states that Carnap is "the perfect exemplar of *Neue Sachlichkeit*" in philosophy, while Hannes Meyer, the director of the Bauhaus school at the time, exemplifies the movement in architecture (Dahms, 2004, p. 363).[1] According to Dahms, the unpublished Bauhaus lectures show that Carnap considers music and art "the proper, conscious and deliberate articulations of life-feelings (*Lebensgefühle*)" (Dahms, 2004, p. 370), a point of view which is coherent with the conception of art presented by Carnap a couple of years later in his well-known "Überwindung der Metaphysics durch logische Analyse der Sprache" (Carnap, 1931a).

Of all aspects of Carnap's philosophy, his standpoints regarding forms of life are perhaps the least explored both by Carnap himself and by his readers. And that seems to be a very important aspect of his relation to the Vienna Circle, since forms of life are one of the chief subjects of that group's Manifesto, *Wissenschaftliche Weltauffassung*, or "scientific world-conception". That text, written in co-authorship by Carnap, Neurath and Hans Hahn, concludes with a section in which the Vienna Circle states that their point of view is tuned up with an attitude towards a down-to-earth empiricism, a tendency to "stand resolutely on the ground of simple human experience" (Hahn, Neurath and Carnap, [1929] 1979, p. 100), in opposition to traditional metaphysics. This tendency is experienced by the Vienna Circle as penetrating "the forms of personal and public life, of teaching, of education, of architecture, and helping to guide the shaping of economic and social life according to rational principles. The scientific world-conception serves life and life receives it" (Hahn, Neurath and Carnap, [1929] 1979, p. 101).

[1] Dahms also points out that Carnap had personal contact with Franz Roh, one of the proponents of the *Neue Sachlichkeit* movement, and analyzes their individual texts to find a remarkable similarity of points of view (Dahms, 2004; also see Dahms, 2016).

Moreover, one year before, Carnap wrote in the preface to his *Der logische Aufbau der Welt* (henceforth *Aufbau*[2]) that

> we sense an inner kinship between the attitude on which our philosophical work is founded and the intellectual attitude which presently operates in entirely different areas of life; we feel this attitude in artistic currents, especially in architecture, and in movements which strive for a meaningful form of human life: of personal and collective life, of education, and of external organization in general. (Carnap, [1928] 1998, p. xv)

There are not many other passages in which Carnap discusses forms of life in his published works. The researches carried through by Galison and Dahms show us that this form of life, which is grasped in more elaborate details by examining Carnap's Bauhaus lectures, can be understood as a kind of modernism. Besides, they show that this modernist form of life is a fundamental feature of the Vienna Circle philosophy. Overlooking such an important aspect may not only undermine our account of an important period of philosophy of science, but it may also impair our judgment concerning how Carnap and the Vienna Circle can contribute to our contemporary debates. Hence I am going to try a step further in that same direction by characterizing Carnap's proposal of a scientific form of life as a utopia as Neurath construes it, which can be understood as a model of social science and technology.

2. Carnap on science and values

I am going to concentrate on the first of Carnap's Bauhaus lectures, the one called *Wissenschaft und Leben*, or "science and life". As the surviving notes show, this lecture, given on October 15, 1929, begins with the phrase "I [that is, Carnap] work with

[2] It is worth mentioning that '*Aufbau*' translates to 'construction' in English. Galison (1996) analyzed more deeply the use of the concept in the context of cultural modernism.

science and you [the audience in Dessau] with (visual) form; both [are] faces of one single life" (Carnap, [RCP], 110-07-49, p. 1).[3] And then Carnap points out that science cannot assume a position of leadership in life, as if it was able to give directions to our actions. This is because, Carnap explains, science deals with knowledge of matters of fact, which must be differentiated from the domain of values, the domain of wishes and demands, which are fundamentally sorts of strivings towards certain aims (Carnap, [RCP], 110-07-49, p. 1).

After some examples, clarifications and classifications, Carnap asks if it is not the case that science is superfluous, since the most important in life is the orientation of the will, the domain of practical affairs. His answer is, of course, negative (Carnap, [RCP], 110-07-49, p. 4). This is because "by means of thought, theorizations, and knowledge, science can and must (1) test the internal consequences of an evaluative position [...] [and teach us] (2) about the means towards a chosen purpose" (Carnap, [RCP], 110-07-49, p. 4-6). Therefore, even though science cannot give us an aim to be pursued or a definition regarding which actions are right or wrong, science can and must derive factual consequences of a certain system of values, besides showing which strategies are the most adequate for reaching an aimed or desired situation. In one of Carnap's examples, the information that it is desirable to build a house that is warm and well lit is not a matter of fact and thus cannot be obtained by science; however, physical science can inform a technique that indicates under which conditions such a house can be built (Carnap, [RCP], 110-07-49, p. 6).

It is possible to further the example and say that science can even show that the same house project may have unwanted

[3] Carnap's notes to the Bauhaus lectures are available at the *Rudolf Carnap Papers* (RCP), in the Archives of Scientific Philosophy, Special Collections Department, University of Pittsburgh. References to these documents are made like this: Carnap, RCP, number of box – number of folder – number of item, page. See the References section below for further information.

consequences if it is developed in a tropical zone, as most people feel uncomfortable when living in what is usually considered "warm houses" when daily average temperature during the whole year is over 25ºC. But science cannot state that it is desirable to build comfortable houses, this is not a matter of fact, but a matter of valuation. It is possible to conceive, for instance, a group of people that prefers to inhabit dwellings which are similar to the ones inhabited by their ancestors, who lived in a much colder weather, instead of modern housings adapted to their tropical current environment. This hypothetical group prizes the value of continuing an aesthetic tradition over the value of comfort. And, even for them, science is able to help, say, by showing how to raise the traditional buildings using the local timber and clay. Adopting a system of values is not a matter of detecting a fact, which is the task of science, but a matter of assuming a personal (or collectively personal) position.

So, even though science cannot give ready-made directions to our actions, the decisions that guide such actions can be informed by science. This is because science is characterized by theoretical reasoning which is the process of rationally deriving consequences of some event. The same kind of reasoning can likewise show the way to attain a certain goal. But, then, how is science characterized by Carnap? The answer to this question is very well-known by Carnapian readers and it was presented in the third Bauhaus lecture, which bears the title of Carnap's famous book, *Der logische Aufbau der Welt*. The third lecture brings a summary of that book's thesis: all branches of science are unified because they deal with objects which are constructed by means of relations among objects of given elementary experience (*Erlebnis*); hence, roughly speaking, our knowledge of objects that cannot be experienced, such as electrons, is possible because we are able to relate it to elementary experiences scientists have with their instruments. In other words, statements about electrons can in principle be translated into statements concerning the personal experience of a

scientist, so that if it is stated that an electron can be detected under such and such circumstances, a scientist understands that if she was in that situation, then she would have such and such experiences with her instruments. Statements of traditional metaphysics, such as those about the essence of reality, however, cannot be thus related and are therefore to be ruled out of the domain of knowledge (Carnap, [RCP], 110-07-45). Statements about values, according to Carnap in the *Aufbau*, even though they are located in the higher levels of the constructional system, together with heteropsychological and cultural objects, are directly related to elementary experiences (Carnap, [1928] 1998, §152). Carnap does not elaborate much on the construction of values in his book, but it is clear that values are not to be ruled out as metaphysics.

The most interesting aspect of the construction of scientific objects in Carnap's work – and the *Aufbau* is no exception (see Friedman, 2007) – is that such a construction is *conventional*. It means that there is no one correct way of constructing the objects of science, but many forms of construction are possible, according to the aims assumed for that construction. The construction outlined in the *Aufbau* aims at a rational reconstruction that remains faithful to a certain order of epistemic primacy in which one's own elementary experiences are taken as basis for the construction of physical objects, which allow the construction of other minds and so forth. But in that text Carnap also mentions the possibility of constructing the objects of science straight from physical objects, the things around us (Carnap, [1928] 1998, §59). This other construction, which is carried through in another of Carnap's texts (see Carnap, 1931b), does not account so well for epistemic primacy, but it takes the objectivity of physical objects as given, while in the *Aufbau* the construction of scientific objectivity is rather complicated, depending on the construction of other minds (Carnap, [1928] 1998, §§145-149). The conventional aspect of Carnap's rational reconstructions presents the result that his

philosophy does not offer definitive answers to any problem; it offers, nevertheless, many tentative answers that, to use Carnap's own example, work as different maps of a railroad: each map describes a different aspect of the railroad which may or may not be expedient for a given aim – the important aspect is that we are able to identify points in the railroad network just by studying the maps (see Carnap, [1928] 1998, §14).

And here Carnap's modernism becomes clear: there is no one *a priori* way of construing our objects of knowledge; instead, there are many possible ways of conceiving and constructing such objects, each one more or less adequate for the ends we have in view. Regarding the domain of values, the topic of the first Bauhaus lecture, the kin conclusion is that there is no path of action that is correct *a priori*, but there are many possible, scientifically-recommended, courses of action, which are to be deemed more or less adequate according to our aims and values. Carnap's philosophy is well-known by this constructivism. By relating his philosophy to the modernist movements of his time, it is easier to make sense of the political and social aspects of Carnap's thought. According to Thomas Uebel (2007, p. 156),

> Carnap's constructivism not only expressed his modernist aesthetic, but was also consonant with his ethical-political attitude. His task was precisely to establish the consistency and philosophical value of the very idea that our conceptual frameworks were reconstructible in different ways and under intentional direction from within.

At this juncture, there is a crucial aspect in Carnap's proposals: he concludes his first Bauhaus lecture by bringing up the possibility of inversion in the relation between facts and values. In this situation, values influence and shape theoretical thought. He points out that people get emotionally attached to their own values, so that when a person faces an inconsistency among his or her values, it is common that this person bends theoretical thinking, instead of bringing the values into harmony. People do

not let go easily of their values, and they often prefer to revise their factual representations than to change a valuational position. Carnap's example is of people who cling to a negative value judgment of a foreign group and then (sometimes unconsciously) shape their critical thinking as to blindly accept reports which are unfavorable to that group (Carnap, [RCP], 110-07-49, p. 6-7). The shorthand notes are very brief in this example, but it is reasonable to suppose that the lecture discussed it more deeply, because this was a sensitive point at the time: in 1929, both the Vienna Circle and the Bauhaus were starting to feel threatened by the rise of Nazism in central Europe (see Stadler, 2007; and Droste, [1992] 2013).

From some passages of the notes, one might get the feeling that Carnap is saying that there is nothing science can do regarding people who choose a certain system of values and aims, and who take on some scientific method to reach those aims, whatever they are. In the example at hand, upholders of totalitarian ideals decide to persecute some groups, which they consider to be wicked, and choose a bunch of so-considered scientific theories to set a path towards a justification of that standpoint and towards the attainment of their goals. In this process, however, they bend all the factual information and critical thinking to fit their values. Carnap's point is that science is indeed able to show that the pursue of such values is prone to bring ruinous consequences for society. But science alone cannot prove the wrongfulness of those aims and it cannot as well convince everyone to follow a different path. What seems to be left for scientifically oriented people to do in this case is to join forces and fight in the political field.

3. The Bauhaus' constructionist project

The Bauhaus movement sought to break some traditional aesthetic forms by tracing back the origins of art in technique, reintegrating the fine arts and the crafts, and bringing together the aesthetic ideals and the means to attain them (Droste, [1992]

2013, p. 52-118). The Bauhaus Manifesto, written by the school founder, Walter Gropius, and published in 1919, says that "[a]rchitects, sculptors, painters – we all must return to craftsmanship! For there is no such thing as 'art by profession'. There is no essential difference between the artist and the artisan. The artist is an exalted artisan" (Gropius, 1919).

In spite of the difficulty of squeezing the ideals of an artistic movement, such as the Bauhaus, into just a couple of paragraphs to fit the aims of this paper, it is possible to say that Bauhaus sought to liberate art from the class prejudice that had created the breach between artist and artisan. This was to be attained in the curriculum of the Bauhaus course, which demanded that students should first have a solid formation in crafts' workshops, such as metallurgy, weaving, woodworking, pottery, wall painting and typography. Only then students would be allowed to join classes of fine arts – and, only afterwards, architecture. But, while taking the crafts courses, Bauhaus students also had a general preliminary course, the *Vorkurs*, which, in some occasions, was taught by Wassily Kandinsky (see Droste, [1992] 2013). The later-published notes of Kandinsky's Bauhaus course reveal some aspects which are interesting for our aims here. Let us see an example. In one of his notes, dated "Summer 1926", Kandinsky proposes the following exercise:

> 7 horizontal 2x4 cm stripes, from bottom to top:
> black – dark-yellow – dark-yellow – light-yellow – light-yellow – white.
> The same sequence with blue.
> Aim: to understand that blue can be graded to white on top and to black on bottom. To understand the impossibility of grading yellow to black. (Kandinsky, [1975] 1996, p. 12).[4])

[4] A slightly different instance of the exercise appears in p. 45, as part of a later version of the same course. It suggests that this exercise was common in Kandinsky's courses.

This exercise can be understood as aiming to create in the art student's experience some acquaintance with basic relations between different colors. This experience was going to be used afterwards in creating art. Other exercises follow, applying this same idea of experiencing to other colors and also to shapes (see Kandinsky, [1975] 1996). In Carnapian parlance, Kandinsky's exercise aimed at providing the students with the basic *Erlebnisse*, lived experiences, of structural relations that was necessary to construct higher objects of art. It is important to remark that it is not just a matter of seeing the color-relations, but of making, manipulating, the relation – the exercise does not simply create basic sense-data, but it brings the students to experience (*erleben*) the relations.

If my translation of Kandinsky's exercise into Carnapian parlance is acceptable, then it is possible to notice an instance of the similarity between Carnap's and Bauhaus's constructionist projects: while the *Aufbau* aims at investigating the logical relation of all sorts of knowledge to basic elementary experience, mapping the notion of epistemic primacy out of the basic relations among elementary experiences, the Bauhaus project, with Kandinsky's *Vorkurs*, aims at investigating the aesthetic relation of the artistic object to basic elementary experience. Both the Bauhaus's concept of art and the *Aufbau*'s concept of knowledge are constructions built on the same grounds.

Regarding Kandinsky's conception of art as construction from relations in elementary experience, Galison points out that

> [t]he analysis into parts and reconstruction from geometry and color directly paralleled the project of Carnap's *Aufbau*. In the place of color and geometry, Carnap and his Vienna Circle had protocol sentences (expressing primitive sense experiences) and combinations of these protocol sentences using logic. Carnap's *Stufenform* [ascension forms] built up the complexities of all scientific terms out of these elements just the way Kandinsky's elementary geometrical forms made up the human figure. In both Bauhaus and *Aufbau*, construction from the intelligible simples eliminated the metaphysics of the unnecessary, the merely decorative. (Galison, 1990, p. 738)

However, Galison reminds us that Carnap objected to some elements of what Kandinsky called the "science of color and form". For instance, says Galison, Kandinsky and others referred to notions such as the "'temperature' or the 'weight' of particular colors" (Galison, 1990, p. 739-40). These notions appeared to Carnap to be metaphysical and, according to Galison, he insisted that these relations should be understood as psychological. Galison does not elaborate much on the subject, but it is possible to grasp Carnap's point as a claim that the temperature and the weight of particular colors are not properties to be assigned to objects themselves, but only to our experience of them. This reveals an important difference between Carnap's and Bauhaus's constructions: while the building up of knowledge in the *Aufbau* is of a logical nature, the Bauhaus construction of the artistic object is an aesthetic one. This is quite obvious, but it entails that the tools used in the two cases are different: even though both constructions are risen from the same grounds of elementary lived experiences, the *Aufbau* uses only demonstrable tools and it aims at some sort of justification; such concepts of demonstrability and justification, however, seem not to be applicable to aesthetic operations and artistic objects. Still, both projects share a pragmatic stance. Carnap's logical conventionalism implies that the construction could be carried through in many different ways according to the desired aim; the choice for those particular tools, basis, and forms of construction is directed to the aim of representing epistemic primacy. All the same, in Bauhaus's construction, even though there seems to be no univocal, demonstrable, way of reaching the aim of bringing together art and technique, it is clear that the choice of the basic elements and relations is directed at that aim.

Although brief, this presentation allows us to see that, in his Bauhaus conferences, Carnap tries to show that science can be understood as a construction similar to that which his audience makes. Carnap's lectures aim at presenting a way for the artists to make sense of science in their own form of life – and, thus, to

recognize that the form of life espoused by the Bauhaus artistic project is quite the same as the form of life adopted in the Vienna Circle's scientific world-conception. Remembering Carnap's first statement of his first lecture: both science and visual form are faces of one single life.

So far I am not bringing any great news to the reader of the papers by Galison and Dahms. But I would like to present a connection of these ideas towards another Vienna Circle project, Otto Neurath's utopianism.

4. Neurath's utopias

Neurath proposes that we see social reforms from the point of view of utopianism. He claims that social transformation should be consciously shaped by means of large-scale plans, in the fashion of the old utopian socialists and of the social-science fiction writers. By establishing and discussing a group of such plans, social science will be able to avoid many false steps and to inquire towards the most adequate arrangement for a given problematic situation (Neurath, [1919] 1979).[5] The notion I would like to highlight here is that of the *conscious shaping of life*.[6] We have seen above that Dahms uses this expression to characterize Carnap's modernism. This is opposed to the attitude of simply letting life take its course, or of simply preserving the *status quo*. Both Bauhaus and Vienna Circle are groups which, on the contrary, take the stance of trying to solve the problems of life, society, science, and art.

The problem faced by Neurath is the complexity of social situations: they present so many traits of such a diverse nature that

[5] Neurath's conception of utopianism departs from the default view on the matter at his time, that of Karl Mannheim's Marxism (see Neurath, [1930] 1981). I am not going to discuss this relation here, for an account of that matter, see Cunha (2014).

[6] In the German original, '*bewußt[er] Lebensgestaltung*' (Neurath, [1919] 1979, p. 235).

must be taken into account in characterizing an existing social situation, that the objects of study of social science must be understood as unique. No social situation is similar enough to another social situation so as to allow drawing regularities and devising generalizations. Social-scientific laws have a quite limited range of application and a narrow perspective of prediction, since they make reference only to the very situation in which they are formulated. This problem brings to social situations the tendency of drifting towards the aggravation of social issues. Neurath claims that social transformation should be guided by general plans, utopias, in which social problems are dealt with from a multitude of points of view that account for the various aspects of the social situation.

For a classic example, consider Thomas More's *Utopia*: that text presents an alleged ideal solution to some problems of the author's society by considering them as a complex whole of intertwined aspects. It is not enough to address the problem of religious freedom, for instance, without realizing that it demands changes in the institution of marriage, as it was construed in 16th Century England. Accordingly, one cannot propose changes in the economic order without taking into account how economic habits are ingrained in popular culture. In his book, More takes a distant island and builds all these entangled aspects of the social transformation he envisages (More, [1516] 2012).[7] And with such a construction, More aims at fomenting debates about social transformation.

Neurath wants social science to perform tasks which are typical of engineering – that is, he projects a form of social technology.[8]

[7] It is commonly understood that it is not clear whether Thomas More actually defends the social order presented in his *Utopia*. For that controversy, see Berneri ([1950] 1971) and Davis (2010).

[8] Indeed, Neurath uses the expression "*gesellschaftstechnische Konstruktion*" as an explication for his concept of utopia (see Neurath [1919] 1979)]. That

Hence, he calls for creativity in social science, an increase in the invention of new social forms, but considering that such new forms must be embedded in broader social plans. Such plans are not to be regarded as mere dreams, but as additions to human possibility:

> [...] social inventions are seldom made by means of a well-planned procedure; usually amateurs and novelists bring forward 'utopias'. The words 'utopia' and 'utopianist' usually include a judgment: a utopia is defined as 'an impracticable – ideal – scheme of human perfection and social improvement'. People who judge in this way are seldom experts in assaying the practicability of social proposals, and, since the utopias of one period often become the trivialities of the following, we suggest using the term 'utopia' for any kind of invented order, pleasant or unpleasant, plausible or implausible, for maker and reader. 'Scientific utopianism' seems to be a fair scientific enterprise, and we may deal with its procedures seriously. (Neurath, [1944] 1970, p. 31)

In a recent paper, I have compared Neurath's conception of utopias to Nancy Cartwright's account of scientific models and nomological machines. As I see them, utopias offer the *ceteris paribus* conditions for the social-scientific laws to be put to work properly. Hence, the repeated operation of utopias allows us to notice the emergence of regularities and further consequences of the imagined, or planned, social order. When such consequences are unwanted or unpleasant, we call such a plan a *dystopia*. Thus, from the operation of utopias and dystopias, it is possible to derive positively valued and negatively valued principles for the application of the intended social transformations (Cunha, 2015), just like the operation of nomological machines gives us the opportunity to learn about the modeled system so as to inform our interventions in the concrete world (see Cartwright, 1999).

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expression is usually translated as 'construction of social engineering', but I prefer 'social technology'.

It is easy to understand how Neurath's scientific utopianism can be connected to what Carnap presented in the Bauhaus conferences. As we have seen above, Carnap's point is that science cannot give us the aims to be pursued, but it can help us inquire about the means. Elisabeth Nemeth, in her thorough study of the concept of utopia in the vastness of Neurath's work, tells us that "it is the task of science to develop 'groups of utopias' and to make transparent the differences between these models in a 'comparative utopistics' [...]. Which of these models is to be preferred is impossible to say on grounds of theory alone: it is the politician who must select one of them" (Nemeth, [1982] 1991, p. 285-6).

The very idea of unified science, one of the most famous proposals of the Vienna Circle, must be regarded as a utopia in this framework. The transparent construction of science by means of logical analysis is an instrument to ease the communication, to display the rational and objective foundations of science in sheer terms, and thus to help bring together all the people who adopt a scientific attitude towards life – the scientific world-conception. As we saw above, this is one of the main goals of the Vienna Circle according to their Manifesto (also see Cartwright *et al.*, 1996). This effort to create a community of people with a scientific attitude, as Nemeth points out, is a way of opposing "the metaphysical concept of science [that] produces and justifies a wild growth of specialisms on the one hand, and the theoretical formulation of irrationalisms on the other". Against this concept, Nemeth continues, "Neurath places the utopia of a transparent organization of the production and dissemination of scientific knowledge" (Nemeth, [1982] 1991, p. 290).

It is possible to suppose that Carnap's expedition to Dessau in 1929 had the objective of presenting the utopia of unified science to an important group of candidates to join that utopia and to help the Vienna Circle build the community of adherents of the scientific world-conception. In other words, the Bauhaus artists and architects were prominent allies of the Vienna Circle in

creating a world in which more people adopt a scientific attitude in dealing with their problems, in which – to use the Vienna Circle Manifesto's words – more people avoid "dark distances", "unfathomable depths" and "unsolvable riddles" (see Hahn, Neurath and Carnap, [1929] 1979, p. 87). The connection with the Bauhaus was important because they were *artists* and not scientists or philosophers of science – it was important to show that the scientific world-conception was not merely a matter of professional choice, it was a matter of how to deal with life. It was crucial to show, quoting once again Carnap's first phrase of his Bauhaus conferences, that science and visual form are "both faces of one single life" (Carnap, [RCP], 110-07-49, p. 1).

So, we are able to say that in the Bauhaus conferences Carnap presents a utopia in Neurathian sense: the utopia of a scientific form of life. Now I shall investigate some further consequences of this association.

5. Utopias and values

In current philosophical environment, the expression 'form of life', *Lebensform*, reminds us of Ludwig Wittgenstein, who in the *Philosophical Investigations* says that "the word language-game is used [...] to emphasize the fact that the *speaking* of a language is part of an activity, or of a form of life" (Wittgenstein, [1953] 2009, §23). A form of life, in this point of view, is a cluster of diverse elements, which establish a non-linguistic context for the general practices of a linguistic community – a context that is prior to the cognitive-meaningful use of language.[9] Even though Wittgenstein's book was published much later than the texts we are discussing here, Hans-Johann Glock points out that the concept "has a long

[9] There is a debate on how the concept of *Lebensform* is to be interpreted in Wittgenstein's philosophy. There are advocates, at least, of a transcendentalist and of a naturalist interpretation of the concept (see Glock, 1996). That debate is beyond the scope of this paper: here, it suffices, I believe, to understand that forms of life are conditions for the use of language forms.

tradition in German philosophy", appearing in the works of many authors since late 18th Century until early 20th Century (Glock, 1996, p. 124).[10] Thus, it is possible to assume that the notion of form of life was part of the philosophical common sense in the German-speaking world when Carnap gave the Bauhaus lectures.

So, forms of life are the contexts in which the cognitive-meaningful use of language takes place. Without resort to notions related to that of language-game, it is possible to say that forms of life are the contexts in which factual investigations are carried through. To use the Carnapian concepts we are dealing with, a certain system of values constitute a part of a form of life, since that is the domain of the aims towards which factual investigations may be directed. Now, if utopias can include proposals of forms of life, then it is reasonable to suppose that utopias can include proposals of values. This makes sense with the idea that utopias must bring about a plurality of aspects that constitute a social situation: clearly values and aims are an intrinsic part of such an aggregate.

Hence, when we say that social science can develop models of social technology, that is, social science can present utopias, we are able to infer that it can offer systems of values, which may or may not be adopted in the implementation of a social transformation. This might sound contradictory, for we have seen that Carnap claims that science cannot tell us that some values, or some aims, are desirable, but it can only show us how to attain those values and what consequences a certain aim might have. However, even

[10]Glock mentions authors such as Hamann, Herder, Hegel, W. von Humboldt, and Spengler (Glock, 1996, p. 124). It is well-known that Vienna Circle members had serious objections to many concepts that appear in the works of those authors (see, for instance, the attack against Spengler in Neurath ([1921] 1973)). Therefore it would be inadequate to hastily advance that there is, say, a Hegelian cuckoo in Carnap's nest. Mormann (2016) investigates the influences of German philosophy of life on Carnap's *Aufbau*. For our purposes in this paper, though, it is enough to have a looser use of 'form of life'.

though the choice of a system of values is not a matter of detecting a fact, but a matter of personal or collective inclination, it is clear that stating that there is a certain system of values that is, or is not, adopted or desired by such and such a group of people is the statement of a fact. As we have seen above, Carnap considers in the *Aufbau* that values are part of the constructional system and, therefore, they are legitimate objects of science. As such, values are located in the higher levels of the constructional system and, thus, investigating them is a task of the cultural sciences – axiology, therefore, is a branch of these sciences.

To propose utopias, one of the tasks of social science in Neurath's view, is to propose interventions in social situations. Science alone cannot command the choice of one particular utopia, such a choice is a matter of personal or collective decision. But such a choice should be informed by science, as Carnap points out. And science, social science, has the task of increasing the number of choices which are available in a given situation – increasing human possibility, as we have seen in Neurath's proposal. This is part of the task of informing a decision.

In Carnap's example of the warm and well-lit house, even though science cannot tell us that a certain model of house is the one to be chosen, it can give us possibilities. In my expansion of the example, in which a traditional community wishes to raise a "warm house" in a tropical area, architects may show that community how to build their historical houses with local material, but they may also show other models of house that could be used. The decision regarding which habitation will be actually built is still a matter to be decided by that community. Historians could also intervene and explain the importance of keeping up an architectonic heritage. Geographers could explain that some house models are better than others in resisting that area's pattern of erosion. Biologists could suggest modifications in the projects for a better ecological relation with the local fauna. All these interventions must be understood as parts of the process of informing

the community's decision. It is at stake in this case what sort of village the community is going to have and what form of life they are going to live in that village. Again, the decision is to be taken by the community by means of their political structure, but such a decision, from the standpoint of the scientific world-conception, ought to be informed by a plurality of points of view facing the broadest variety of available possibilities.

In the version of Neurath's famous ship analogy that appeared in *Foundations of the Social Sciences*, he tells us to

> Imagine sailors who, far out at sea, transform the shape of their clumsy vessel from a more circular to a more fishlike one. They make use of some drifting timber, besides the timber of the old structure, to modify the skeleton and the hull of their vessel. But they cannot put the ship in dock to start from scratch. During their work they stay on the old structure and deal with heavy gales and thundering waves. In transforming their ship they take care that dangerous leakages do not occur. A new ship grows out of the old one, step by step – and while they are still building, the sailors may already be thinking of a new structure, and they will not always agree with one another. The whole business will go on in a way we cannot even anticipate today.
> This is our fate. (Neurath, [1944] 1970, p. 47)

Neurath's image appears in many of his texts and it serves to illustrate and summarize many aspects of his philosophy (see Cartwright *et al.*, 1996). In our present discussion, it can be understood as a metaphor for a social intervention in the making. In this context, utopianists are those sailors who develop projects for the transformation of the ship: they have to work out the ideals of the different sailors in relation to the material they have at hand as well as to the needs of the ship in short, medium and long terms. In this process, as I argued above, utopias bring about values, relations between means and ends. Also, utopianists are not able to leave the ship or to project the perfect vessel as if they could build it from scratch in a dock: just like in the Bauhaus workshops, they must be part artists and part artisans, taking into account at

once the ideal project and the technical aspects of the execution. Finally, the concluding sentence of the quotation above indicates that the sailors cannot let the ship drift, given the facts that the ship is admittedly not in perfect conditions and that there are always storms approaching, with heavy gales and thundering waves. Thus, it is the fate of the sailors to carry out the reconstruction. Given such a fate, Neurath's standpoint is that the community of sailors cannot just wait and hope for some once-and-for-all solution to appear, for there is no such thing: our ship will always need repairs and we will never be able to bring the ship to an ideally safe bay. So, utopianists are not the ones to give ready solutions, but they should present possibilities – the decision as to which possibility is to be implemented is a responsibility of the whole community. Nevertheless, Neurath contends that it is of greatest importance to create and discuss utopias, plans for transformations.

Concluding remarks

Following Galison and Dahms, this paper has showed Carnap's 1929 Bauhaus conferences as the display of a form of life that underlies the scientific world-conception of the Vienna Circle. This form of life brings together the Bauhaus artists and the Vienna Circle philosophers in a common modernism, a part of the cultural movement known as *Neue Sachlichkeit*. I argued that this can be understood as the presentation of a utopia in Neurath's sense, and, therefore, as I have argued elsewhere, as a model of social science and technology. Neurath's utopianism appears as a way to solve some not-unrelated problems that concerned social scientists in early 20th Century: the complexity of social situations, the difficulty for devising nomological generalizations and predictions, and the split between theorizations and perspectives of interventions. Utopias deal with these problems altogether, performing a role which is similar to the part played by models in current-day natural science. This point of view connects science and techno-

logy in the social domain – in other words, it emphasizes the technological aspect of social science.

By investigating the bridge between Neurath's utopianism and Carnap's Bauhaus conferences, I presented the conclusion that utopias deal with values – something which is coherent with the technological perspective on social science brought by this point of view. The problem of values in technology is a contemporary concern of philosophy of science and it is commonly understood that Vienna Circle authors, such as Carnap and Neurath, do not have much to say on that topic. Indeed, such authors are often dismissed in the recent debates because they seem to present a hard and fast delimitation between facts and values – something which is regarded either as inadequate or as problematic. We have seen, however, that such a dichotomy in the Vienna Circle works might not be so sharp, since utopias can include proposals of forms of life. And, since forms of life necessarily have to do with values, we have to concede that scientific utopianism has implications towards the domain of values. The separation is still on, but there is no reason to see it as a litigious divorce, since there is communication between the parts.

Nevertheless, we must agree that the Vienna Circle has not written much on the subject.[11] In order to develop a more thorough discussion of the matter, we have to take up other, more recent authors. My investigation seems to suggest, however, the hypothesis that the modernist points of view of Carnap and Neurath might still be of some help in this contemporary debate. But this is a theme for another paper.

[11] Carnap (1934) discusses facts and values and he reassesses his position later in life in a debate with Abraham Kaplan, published in Schilpp (1963, p. 827-856/999-1013). Cartwright *et al.* (1996, p. 111-113) point out that Neurath discusses values in his earlier texts, those published before WWI; he also makes some brief remarks in Neurath ([1944] 1970, §§ 17-19).

Acknowledgments
A previous version of this paper was presented at the XVII Meeting of the Brazilian National Association of Philosophy Research (ANPOF), Aracaju, Brazil, October 2016. I thank the audience in that occasion for their questions and remarks. I also thank Alexander Linsbichler (University of Vienna) for important discussions and for reading the manuscript. I am also greatly indebted to the work of the Archives of Scientific Philosophy, Special Collections Department, University of Pittsburgh, for deciphering, transcribing, and making available Carnap's shorthand notes of the Bauhaus conferences (and many other documents).

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Artigo recebido em 25/08/2017, aprovado em 20/11/2017