

O T T O N E U R A T H

**"The sum total of world happiness is too small.
It must be made bigger."**

After attending school in Vienna, Otto Neurath, born in 1882 as the son of the social-reform economist Wilhelm Neurath, studied mathematics, natural sciences, national economics and history at the universities of Vienna and Berlin. He wrote two dissertations on ancient economic history, receiving a doctorate phil. summa cum laude. In 1906 he absolved his military service and became a teacher for national economics at the Wiener Handelsacademy. In 1907, he married the women's rights activist Anna Schaphire, who died after giving birth to their son Paul. In 1912, he marries the blind mathematician Olga Hahn, with whom he published articles on mathematics before World War I. During this time the "First Viennese Circle" was founded with Hans Hahn, Olga's brother, Phillip Frank, brother of the architect Josef Frank, and Richard von Mises, engaged in scientific and philosophical discourse. Before 1914, Neurath published his first articles on his theories on "war economics" and on the economic situation in the Balkan states. A number of study trips were financed by a grant awarded by the Carnegie Foundation For International Peace. After serving on the East Front and in Vienna in World War I, Neurath was appointed director to the German War Museum in Leipzig and parallel to this worked in the war economy department of the War Ministry in Vienna. During this time he developed his theory and practice of graphic representation of socio-economic relations and his natural science models. In 1917, he was appointed private lecturer in political economics at the University Of Heidelberg, a position, which due to his war service and his involvement in the Munich revolutionary government, he was never able to exercise. As president to the Central Economic Office in Munich, Neurath tried to apply his theories on full socialization. As the movement was suppressed Neurath found himself sentenced to one and a half years of

imprisonment, "aiding and abetting high treason". Due to Otto Bauer's intervention, Neurath was able to evade his sentence. Returning to Vienna, Neurath became involved in Social Democratic communal politics and as a consequence in the Viennese Settlements and Allotment Gardeners Movement, still aiming to apply his theories of full socialization. After being involved in the first settlers exhibitions in front of Vienna City Hall in 1921, Neurath founded the Museum for Settlement And City Planning, which in 1924 became the Social and Economic Museum of which he was appointed director. Supported by an interdisciplinary team, Neurath began to develop the "Viennese method of pictorial statistics", which later became known as the "Isotype Pictorial Language". During this time, Neurath also resumed his pre-war engagement with the Vienna Circle, together with Rudolf Carnap and Hans Hahn, publishing the manifesto *Wissenschaftliche Weltauffassung: Der Wiener Kreis* (Scientific World View: The Vienna Circle) in 1929 and founding the "*Verein Ernst Mach*" (1928-1934) serving the popularisation of the Vienna Circle bound to the Vienna school reform and the adult education program.

Following the First World War, Austria found itself in a state of crisis. The former empire, stripped of its annexed countries and resources, was in a political, economic and social turmoil. In 1919, the Social Democratic municipal government of Vienna launched a radical program to reform the city's infrastructure along socialist lines. The *Gemeindebauten*, which incorporated 64,000 dwellings, were built as a result of the large scale housing deficiency after the war. Housing one-tenth of the population, they can be seen as the main achievement of the reform program. However, this program, launched in 1923, was preceded by the often unmentioned settlers movement, a self-help initiative, which derived out of the allotment gardeners associations, to produce housing and food self-sufficiently. What these two housing initiatives, opposite in almost all aspects, had in common were the incorporated communal facilities as

the basis for proletarian culture to develop. The social democratic ideology of leading the working class to a higher culture relied on the eight hours legislature passed in 1919, which generated the aspect of leisure to the proletarian society. These eight hours of gained time also enabled the settlers to produce their own food and housing. The Austro-Marxist movement, forced to recline to the boundaries of the capital, was not only spatially, but also economically restricted. The urgency of the post-war situation can be seen as the basis for the innovative collaboration of the social democratic city council with the self-organized associations of the settlers movement to house and feed the population and beyond that to exemplify proletarian cultural virtues, such as solidarity, self-organization and adult education within this context.

Otto Neurath was not an architect or an urban planner, he was a social economist and a philosopher. He was involved in Viennese post-war town planning for two main reasons: the chance to apply his theories on full socialization within the structures of the settlers associations, and a phenomenon which will characterize his entire life, as a reaction to the demands of the current situation. As his academic career was ended due to his involvement in the Munich revolutionary government, Neurath's previous exclusively theoretical work is suddenly bound to a specific time and place. To understand his involvement in the Viennese Settlement's Movement, it is important to explain his theoretical background as an economist and philosopher, as his positivist philosophy aims for practicability and his theory of an evolving process of full socialization for try-out. Although when confronted with reality, which forced Neurath to modify his theories to a more local level, they remain grounded on the principle of socializing society by society. This can be seen as the basis for all his work, before and after the Vienna case. The end of his involvement in the settlers organizations is followed by the development of a pictorial language and a museum concept to facilitate the public with comprehensive statistical data to understand its own condition and

situation. Otto Neurath was a complex figure, hard to grasp in the diversity of his involvements.

How can one obtain an overview of a man, both of theory and practice, who covered the entire spectrum of knowledge including architecture, economic history, mathematics and logic, philosophy, history and theory of knowledge, visual education and museum science in about 300 publications (including around 30 monographs and books), and who worked in at least four countries (Austria, Germany, The Netherlands, England) as a social scientist and teacher at commercial colleges, workers' colleges, adult education schools and at universities, a man who pursued a demanding profession (museum director), yet also figured centrally in the Vienna Circle?"(1)

By examining the Viennese case as a specific situation of place and time, we will research Otto Neurath's vision of a coming future society, which was not only conceptually implemented in the Viennese settlements movement, but was also very undogmatically adapted by him to the restrictions that practice implied.

His association with architecture can in this way be considered a historical coincidence, or better a recognized chance. Architecture in its broadest terms, as not only recognized by Neurath, but also by the Social Democratic Party, could be used as a teaching tool not only to manifest political, but interdependently, economic meaning.

"The economy of a society is an immense building, as the realization of an economy plan is similar to the design of an architectural plan. The 'economy architect' is like an architect who tries to grasp precisely and numerically the size of the different pieces of his construction, the volume of the produced space and so on."(2)

Meta-level

War economy

In his adolescence, Neurath was strongly influenced by the intellec-

tual atmosphere of his father, who considered the traditional economic order with its crises and misery responsible for causing great unhappiness. In his dissertation about the economic history of antiquity, published in 1909, Otto Neurath compared different economic systems in order to bring out the reciprocal effects between social and economic developments, investigating the relationship between the production and the distribution of goods and prosperity.(3) According to Neurath, the questions of profitability should stand back in favour of productivity. A big war could imply reforms into our economic system, which would enable an unobstructed production and consumption.(4) Neurath believed that a war could trigger improvement of a population's living standard. In his work about war economics, Otto Neurath would investigate the changes provided by war. During the Greek and Roman empires, war was one way of securing an income. Wars were only considered, after the British mercantilisms, as disturbances of the economy. The economy of war was needed, as the preceding step before arriving at an economy providing a full development of production capacities. In wartime, profitability questions stand back in favour of productivity. Monetary exchange is replaced by barter, slowly leading to a *Naturwirtschaft* (economy in kind), as Neurath called it. In capitalist economy, Neurath used the term of "the free market economy", overproduction is periodically reached. In this case, the profit stops increasing or even declines. To avoid these kind of conditions deliberate cuts in production are made by the entrepreneurs to keep the profit constant. In case of war, these restrictions could be evaded, liberating the productive forces.(5) Neurath saw a possibility in war to prevent or to delay the crises that arose from overproduction. All capacities would be employed for the production of material, which in turn would be consequently destroyed.

"There are some signs that a world war would radically change the current monetary and credit system, namely in the direction of a large-scale economy in kind controlled by the state."(6)

According to Neurath, "at the start of the war a state, in order to

counteract the constraints of monetary and credit economy, should start by taking out loans on its stock of gold or by raising taxes. If these measures do not suffice, the state could take "administrative measures", commandeering the required commodities. The commandeered commodities would mainly imply manpower. He argued for the "introduction of a requisition system comparable to a tax system in those regions that are subordinate to an organised administration, be it foreign or home territory".(7) The international situation was fragile after the First World War and the states were concerned with the question of producing or obtaining the necessary goods in case of another war. Neurath proposed a general mobilisation plan not restricted to the army, but including the whole social structure as well as the allied states. A large-scale economy in kind would be the necessary economic condition for winning a future world war. An economy in kind necessitates an economic plan, controlled by a central institution, which would oversee the whole economy. The transitory phase from a free market economy to an economy of kind would be linked by an "administrative economy". According to Neurath, a "calculation in kind" was a necessary condition for an economic plan. The monetary statistics would be replaced by "statistics in kind", making a calculation for the overview on goods production, consumption, importation, etc. possible. Neurath considered economics in kind as the solution to the problems of the free market economy, as it would obtain and distribute products directly. He had a concrete vision of the complete organisation of a state at war, starting with the centralisation of bread production via expansion of the storehouse system up to the standardisation of railway wagons.(8) During the First World War, Neurath had to realize that a lot of his ideas were illusory, but he still believed that war could be the transitory phase to an economy of kind. His socialisation plan would show how to realize an ideal society based on an economy in kind.

Total socialization

Neurath's socialization plans concerned the radical reorganization of

the common economy. The nationalization of activities, as the main objective of the social parties, was seen as a secondary problem by him. His program of full socialization attended the objective to lead the economy to a scheduled administration in favour of society by society.(9)

The "8-Punkte-Programm" elaborated by Otto Neurath and, his co-director at the Leipzig Museum, Wolfgang Schumann for the Reichstag commission of Saxony in March, 1919 introduced the principles of total socialisation:

1. the entire political economy will be socialized, which means subordinate to a scheduled administration of the production and distribution in respect to general principles.
2. In the German Empire, the right for welfare in case of private holdings is abolished. The general work duty and the creation of work opportunities will be controlled by special laws.
3. In the German Empire, a minimum of apartments, nutrition, clothes, education and leisure will be provided by law to everyone based on the publicized economy plan.
4. The realization of socialization depends on central economic departments of the federal states. The central economic departments will be obligated by federal and regional laws to support the socialization process.
5. For the general regulation of socialization issues and the maintenance of uniformity, the empire will create a socialization department.
6. The socialization will be realized in part through nationalization, but mainly by the creation of an encompassing total economic network, based on syndicates, cooperatives, community organizations etc.
7. The main task of the central economic departments is the recording of universal statistics and the elaboration of a general economic plan.
8. The realization of the socialization will be predominantly controlled and protected by a union composed of worker organizations

(unions, worker committee, worker council, central worker control council).

The administrative economy required a different conceptual basis than the previous market economy. Neurath wanted to eliminate actual profit.(10) The new driving force being a plan economy, based on statistical recording and an estimation of production and consumption for specific zones. These economic plans should be developed by authorities, which were to deal with national economics similar to a gigantic company. Their main activity would be the design of future economic plans, but also the recording of the respective economic evolution. By this economic plan, the representative body of the people would be able to analyse the effects of quantitative shifts, as for example the construction of a barrage within the framework of the total economy. The importance of every single measure would become obvious by contemplation of the whole.(11) The shifting thrift of a measuring system can only be qualified by a comparison with the general plan. The "pleasantness" of both options having to be judged directly.(12) This part of the total socialization concept became the main point of attack, as it implied the abolition of a monetary common economy. This idea is based on Neurath's reflection in 1912 that no calculation exists, which is capable of calculating the optimal distribution of goods. Integral decisions have to be made between different economic plans, as the optimisation from one to another can not be calculated by a standard measure. Neurath, by demanding to apply something comparable to a "modern-multi-criteria analysis", when describing standards of society, money, for example, as a universal accounting unit should be replaced by a battery of indicators such as health, literacy, child death rates, life expectancy, infrastructure and cultural wealth. He proposed that these alternatives ought to be analysed with respect to the "happiness accounts", which they would produce.(13) Neurath's socialization plan restricted itself to a reorganization of economy, its conceptual basis and deliberately excluded "power issues". At this point in research, Neurath's position

to this issue stays unclear, as he only spoke about the necessity of a strong separation between the economic and the political council administration. After World War I, Neurath argued that his economic concept, which had been organized for the war condition, should also be applicable in times of peace for the benefit of all. Schumann, co-director of the Leipzig Museum, supposedly convinced Neurath in long conversations to join the Social Democratic Party in Munich, in order to present his economic theories to the leadership of the party. (14)

Otto Neurath's involvement in the Viennese settlements program was not only a chance to apply his economic concept at least in parts to a real situation, but can also be seen as a logical consequence of his social understanding of science based on the philosophy of the Vienna Circle.

Philosophy

The Vienna Circle was a philosophical group with around 36 members from the fields of philosophy, logic, mathematics and natural sciences between the world wars in Vienna and can be considered one of the most influential philosophical movements of the 20th century.

"...this philosophy (the logical empiricism of the Vienna Circle) was to perform important social functions: to stimulate a scientific approach in people to their own convictions and thereby to eradicate irrational prejudice, ideological fanaticism, and the brute force in public affairs. It was not just to be a science, but also to perform an educational task in the struggle against irrational beliefs that poison collective life and give rise to attempts to impose them by force. (...) The positivists of that day liked to repeat Locke's saying that we may hold any belief only with such a degree of certitude as the degree of justification warrants. This slogan which briefly sums up the fundamental rule of practical rationalism, was directed against all ideological pressures and fostered a spirit of tolerance in collective life.

The positivists championed a scientific attitude to the world as a social slogan that was to defend democracy, tolerance, and cooperation. They professed a kind of utopianism, based on the assumption that the attitude of the intellectual whose convictions are more or less determined by the rigours of scientific thinking could become the socially dominant way of thinking, and that the independent position of the intellectual could serve as a model towards which a well-organized education might lead society as a whole."(15)

There was no absolute certainty of knowledge in science. Science was seen as a collective, social process of unified knowledge and shaping of the world, not a sum of insights of individuals of genius.(16) Whereas the bourgeoisie made a clear distinction between natural and social sciences, scorning manual labour, the positivists, in tradition of the enlightenment and the modern revolutions embraced the culture of workers, supporting the development of an individual sense of self-worth and an awareness of collective identity. As science was considered a collective social process, the proletarians, as the vast majority of the population, became an immensely important group. The theory of positivism aimed towards the practice. By the method of developing "protocol sentences" a reality was constructed from statements about facts. By such a "transparent construction" of all elements, whether simple or complex, nationalist, metaphysical and anthroposophist tendencies were to be annulated. All sciences would be united by their common starting points. The process steered by conscious organization was supposed to lead to an improvement of material-living conditions, and specifically for Otto Neurath, man was to become the creator of his own happiness. By democratising the producers, enabling them to control production and distribution, capitalist economy was supposed to be eliminated. To enable such a democratisation, the aspect of popular education arose to a movement, believing science should be accessible to all people versus treating it as a relic. (17)

The Housing Program Of Red Vienna 1919-1934

Post-war Vienna

After World War I the Austrian Republic was left on the edge of economic collapse and famine, cut off from its former resources due to the new political situation. In contrast to Hungary and Bavaria in 1918, Social Democrats were able to avert a Bolshevik revolution in Austria. Yet, at the end of 1919 they began to lose power and were only able to retreat to the capital, where the first socialist mayor, Jacob Reumann, was elected in 1919, endeavoring a "Red Vienna", as a model for municipal socialism prefiguring the future socialist society. In 1910 with over 64000, of which more than 7000 were children, were homeless and the number was growing exorbitantly. After the war most people coming to Vienna were refugees and war veterans contributing to the rise of the number of home seekers of 42,642 to 68,175 to 1922-24.

Aside from the acute housing and food shortage, were the conditions of the existent workers dwellings in Vienna among the worst in Europe. Devastating illnesses, such as the cholera epidemics in 1830, 1832, 1849 and 1873 resulted from the poor conditions of the workers mass housing. Already in 1900, Point 10 of the Viennese local political program stated the demand for an increasing production of workers residences. The housing market in Vienna was in private hand, triggering violent conflicts and class hatred.

After the stabilization of the Austrian currency in 1923 the largest scale building program at that time in Europe was initiated. Between 1919 and 1934 64,000 dwellings were built, mainly financed by tax derivations. With the housing program, not only creating dwellings, but including social and cultural institutions concerned with education, health and child care, the municipality aimed to enable the proletariat to become a "new socialized humanity". (18) According to Neurath, in Hack und Spaten, the terrible conditions of proletarian housing of pre-war Vienna triggered a new structure of the housing program, as the municipality as well as the workers had formerly not been involved in the process of development due to the private mar-



Gerd Arntz , The social conflict



Wild settlement, 1923

ket.

Wild settlements

Lack of food and shelter mobilized inhabitants of all classes to squat 6.5 million square meters of public land on the outskirts of Vienna. By 1918 100,000 people, about 14,000 families had "wildly" settled in the periphery of Vienna to live in self-built sheds and growing their own food. These "zones" appeared after the clearance from existing forests in the past by firewood procurement. After the acquisition of allotment gardens a period of wild settlements followed. This developing movement did not only include the proletariat, but members of all classes, as lack of housing and food affected all layers of society. According to the *Gartenfreund*, an allotment gardeners magazine of the time, the estimated production of self-grown vegetables in the year 1918 amounted to about 1,200 railway cars of produce, enough to provide nourishment for 160,000 people. Peter Marcuse describes the wild settlements movement of Vienna during and after World War 1 as "probably the most wide-spread example of physical self-help in housing in the twentieth century in an industrialized nation".(19)

"Without the help of the community, yes even without permission of the landowners and the construction police, hundreds of permanent settlements have been created by means of self help by the allotment users. Some are massively executed houses, but most are Bretterhütten, which have been however put together from all imaginable, cheaply purchased material. The danger originated, that the untiring work and the modest property of the small-gardener would be lost in badly prepared construction intent and that the extraordinarily beautiful scenic surroundings of Vienna would be inevitably ruined through this wild construction activity. Under these circumstances, it is not remarkable that in the circles of the garden users the arising thought to regulate the wild settlements' building activities into cooperatives, backed by state and community, found broad support. As most of the settlers were union members and politically

organized, many konsumgenossenschaftlich, the thought of a taut organization was self-evident from the very start."(20)

Aside from the fear that the squatters would turn the protected green belt of Vienna into "timber sheds and gipsy villages" the municipal government was dependent on this autonomous structure that had developed to secure food supplies in a time of economic instability and political reorganization. After the war, the settlement communities began to organize themselves politically and economically, founding cooperative associations dealing with food growth, production of building materials and construction and the management of finances and maintenance. Many of the squatters had reestablished themselves in the city, as conditions in Vienna began to improve in the spring of 1919. The majority of settlers left were better-skilled workers, familiar with political organization through their experience in trade unions and the labor movement. The Siedlungen became more established and politically structured as self-governing cooperative associations.

Politics

According to Gustav Scheu, appointed advisor in housing questions at the Zentralstelle Fuer Wohnungsreform (central agency for housing reform) and in favor of the garden city idea of cooperative ownership and management, the city was not to participate directly in the production of new housing, but to develop the missing infrastructure to the settlements and to pass a building code for low rise single family houses with gardens in the periphery of Vienna. The city should start with actually building communal living blocks within the city, as here property was already owned by the municipality.(21) For the organization of further settlement this would imply a clear division of tasks between the local authorities providing funds, building sites and the necessary public transport and infrastructure and the cooperative

building associations being responsible for design and construction of the houses. Otto Neurath contributed conceptually, though not administratively to the Social Democrats spatial politics.(22) Political revolution, to him, was a necessary prerequisite for social revolution, believing that only a socialist society could create socialist man.(23) The decisive moment for Neurath to take part in politics was the conviction that the time had now come to replace the capitalist free-market economy by a happiness-bringing administrative economy. Based on his knowledge of centralized war economy, Neurath developed a concept for the full-socialization of all economic activity. The application of this concept became his main task for the next years, first in Munich and then in Vienna.(24) Due to feasibility problems, Neurath failed with his social program for the workers movement in Leipzig. The success came in Munich in March 1919, where he became president of the Bavarian Central Economy Department during the revolutionary government. He impressed with his passion, his burning impatience, his eagerness to the unrestrained works, his energy, and his enthusiasm, as Ernst Niekisch noted in his diary, also describing him as being ruthless, brutal, audacious and naughty. (25) His supposed politically neutral position, based on the statement that his developed socialization program was not to be connected to any socialist ideology or political organization will help him to be expelled to Vienna, instead of serving the sentence of the court of one and a half years of imprisonment for his participation in the revolutionary government of Munich.(26) His claimed position as a "social technician" will continue to play an important role in his upcoming activities. Supposedly, through the intervention of Otto Bauer, who knew him well through their common work at the Ministry of War in Munich, Neurath was extradited to Vienna in 1919. Otto Bauer, at the time president of the socialization commission and active member of the Social Democrats, introduced Otto Neurath to the party. His relationship to the party was difficult, as he did not want to influence his preparation of a Gutachten (social report) by the current political situation, which resulted in

violent criticisms of his socialization concepts.

Wilhelm Ellebogen, successor to Otto Bauer, attacked his evaluation of the cooperative institutions role in capitalist society, considering his idea of a total socialization as utopian. Ellebogen believed that the heart of the future socialist economic order in a capitalist society would be in insignificant cooperative associations. Neurath, skeptical of this, saw these associations more as an important aspect for the workers movement than as a key factor for the general socialization of the economy, considering them to remain structures of social capitalism.(27)

Otto Neurath acclaimed the creation of an interconnecting Gesamtwirtschaftsplan (plan of total economy) to be developed and directed by a department for central economy, instead of the socialization of single production factories. All hope for the realization of this plan of economy disappeared when the Social Democrats lost national elections. Neurath realized that his socialization concept had to be adapted, if it were to have any practical relevance. He propagated the Spin-off of the entire municipal economy department into thirteen economic departments whose main structure being similar to those of Vertikalkonzerne (vertical groups). One of which would be the building- and housing department. After this change, space was created for a more specific reflection. At this time, the centralization of union movements was based on comparable principles. Neurath considered the business councils as organs of the labour movement preparing the eventual control of all economic sectors by the proletariat. Crucial for the transformation of Neurath's total socialization concept, in order to make it applicable, were two events: The proletarian settlers' mass movement and the guild socialism, supplying a model for a restructuring of the economy within a proletarian setting.

The proletarian settlers mass movement

Otto Neurath was appointed Secretary to the Forschungsinstitut für Gemeinwirtschaft (research institute for common economy) in 1920.

The institute would serve as an explanation and information platform for common economics supplied with information of foreign experiences. One of the visitors to the institute was Dr. Kampffmeyer in 1919, founder of the German garden city movement, who later became Settlers Secretary of the municipality. Kampffmeyer and Neurath worked together, in 1920, on the common goal of organizing the settlers movement, which at this point was still in a state of disorder. With their help, in January 1921, the Hauptverband für Siedlungs- und Kleingartenwesen, later called Hauptverband was founded with Neurath as general secretary. Kampffmeyer taking on the former position of Max Ermers as leader of the settlements department of Vienna. The Hauptverband was necessary to avoid the fragmentation of settlers and allotment gardeners associations. In 1920, Neurath recognized the importance of the dynamic in the proletarian settlers mass movement for the Social Democratic Party, but his main focus lay on the movements capability for the socialization of parts of the economy. Neurath directly saw the connection between his ideas of a centralized economy and the settlers interests. Contrary to his enthusiasms, the party would first maintain a distant position, which later changed as the dependency on the movements contribution to food production and housing was realized. The clever coordination activity of Otto Neurath, Kampffmeyer and others made it possible that by 1921 the Hauptverband represented a majority of the settlers associations. In the beginning of September, 1920, Neurath unified its members, belonging to numerous settlers organizations, for a mass demonstration.

"Give us land, wood and stone - and we will make bread of it."

However, the first demonstration in front of city hall by 50,000 squatters and subsistence gardeners, demanding of the city to provide land by expropriation or leasing of city-owned property at reduced rates and the legalization of wild settlements by changing the building codes, was not met. The second time around on April 3, 1921 the

demonstrators came politically organized in a union of cooperative settlement associations leading to the founding of the Federal Housing And Settlement Fund, which provided the associations with building subsidies.

The movement was very much supported, not only by intellectuals, such as Otto Neurath, but also by architects like Adolf Loos, Peter Behrens, Grete Lihotzky, Josef Frank and others, linking the collaboration between settlers and authorities with the aim to structure and control the spread and develop Siedlungen (settlements), which would enable its inhabitants to live as self-sufficiently as possible. "This movement impressed Loos. For the first time in his life he learned solidarity, sacrifice, idealism and with it the whole strength of a peoples movement. This impressed him deeply. On the day of the demonstration of the settlers, where they demanded land, construction-material and subsidies, an article of Loos appeared in a Viennese daily. It was called: `The new movement, that so many inhabitants of this city have grasped, the settlements movement, also demands new people`. The article closed with the words: " Hat off to the settlers".(28) Adolf Loos commented on this event in the text "Der Tag der Siedler" (day of the settlers): "(...)...the self-built clod of the settler. Result of a revolution, that the worker has undertaken against the barracks-force of the factories. Result of a bloodless movement and therefore with a human result...(...).The allotment rescues not only the people, it rescues the state. The task of this state will now be to use the labor contribution that part of the city`s inhabitants are willing to provide voluntarily, for the well being of the general public. The work of the allotment gardeners brings food, which otherwise would have to be imported from other countries. ...(...)
Secondly: The allotment gardener should live where his garden is. At present day, the distant allotment garden is an hour-glutton; some spending an hour there, an hour back with the tramway. Therefore it should not only be a garden but: home. And this further enables undivided working time, abolition of the uneconomic of distributed breaks throughout the whole day. Eight hours of continuous dedica-

tion to the fold-works, the office, the factory.." (29)

After the second demonstration on the third of April 1921, the settler movement was fully supported by the social-democratic party.

Twelve days after the second demonstration, a settlement department was created, providing living and settlement funds. This was a big impulse for the movement, although the cooperation between settlers and the municipality was kind of chaotic. The socialistic departure-mood of this time made the collaboration possible.

One main figure of this collaboration was Jakob Reumann, social democratic mayor of Vienna between 1919 and 1923. He made it possible that such persons as Gustav Scheu, Max Ermers, Hans Kampffmeyer and Adolf Loos worked on the development of the city during his term as mayor. Reumann was responsible for the following changes: the rewriting of the Vienna construction law in Mai 1921, the foundation of the Vienna construction department in 1921, the establishment of the allotment garden and settlement districts in the Generalregulierungsplan for Vienna in Juli 1921, prerequisiting Neurath`s idea to develop a Generalarchitekturplan in 1924, and the treatise of five exhibitions in front of city hall and the resolution of the municipality in 1924 for the construction of 5000 apartments per year in the following 5 years.

In October 1923, seventy years old, after the elections, he decided to retire from his political function as mayor.(30) The Allotment Gardeners and Settlers Organization was administratively a communal affair. The main purpose of the movement based on self-administration of the gardens, housing etc. , one main goal being the undermining of all possibilities of individual enrichment. The municipality promoted long-term leases of communal ground. Allotment gardeners and settlers wanted to maintain solidarity not only within their movement, but were reliant on municipal support and sympathy. The settlers were generally against individualization and the personal control of ground and house. These ideals were common within the workers` movement at that time. Neurath commented this with the following sentences: "The creation of private property should be avoided.

Where it can't be avoided, corresponding relationships should prevent speculative utilization. Aim is community and cooperative property;(...)"(31)

To avoid speculation, the housing property that was privately owned was only allowed to be passed on within the family, otherwise it became communal property again. This sympathy for the settlements movement was not generally shared by the municipality, but was more reliant on individuals, such as Reumann or Helmer, making statements like "we must proceed from the single-production of mass housing to the mass-production of single houses".(32) The Social Democratic Party was aware of their obligation to take the settlers' movement into account. The main reason being the majority of the settlers social democratic confession. The workers living in communal buildings, as well as those living in small house settlements were Social Democrats, were organized in Social Democratic associations and would later fight against the troops of the Republican Protection-association. However, some of the party's members were opposed to the organized self-help of the workers because they considered it a loss of influence for the municipality. The ambivalent position of the Social Democrats was caused by their political aim for a major building program and their wish to cohere with the workers. The collaboration between the settlers and the municipality first conflicted in 1922, as the pressure of the city administration on the settlers grew, forcing small cooperatives to fuse into the Siedlungsunion.

"Although a professionalization and rationalization of the cooperative administrations were hereby enabled and an enforcement of its role as building contractor made possible, this organizational change eliminated the aspect of self-administration by the settlement-community."(33)

Together with Hans Kampffmeyer, Otto Neurath became involved in the foundation of the Siedlungs- and Baugilde, consisting of the Tenants Union, the Union Of Settlers And Allotment Association and the Central Union Of Construction Workers. The Baugilde (building

guild), with 400,000 members, dealt with building and maintenance processes of the different cooperative associations and became the centralized organization for the purchase of building material, furniture and housing insurances. The guild incorporated a number of building and agricultural bureaus, providing technical advice on design, construction and interior decoration, farming and animal husbandry, but also a bank and a settlement museum.(34) After a few months, as the Hauptverband became known as an effective institution, successfully representing all settlers interests before the public and the authorities, the allotment gardeners decided to join the settlers. In October, 1921 the OeVSK, Oesterreichischer Verband Fuer Siedlungs- und Kleingartenwesen (Austrian Union Of Settlement and Allotment gardeners), as a branch of the Baugilde was founded, fusing the Hauptverband and the Zentralverband der Kleingärtner und Siedlungsgenossenschaften. Adolf Mueller, general secretary of the Hauptverband describes the OeVSK as an organization where "a proletarian basis of allotment gardeners and settlers interests were represented by one whole force...". The OeVSK also had a building office, but organized lectures and courses on settlement housing as well. Design and theory classes were taught by Otto Neurath, Max Ermers, Adolf Loos, Margarete Lihotzky, Josef Frank, Hans Kampffmeyer and other invited speakers.(35) Gustav Scheu, who resigned as advisor for housing questions to the municipality after just one year in 1920, ran the legal protection agency for the OeVSK until 1934. Loos, who in 1920 was first chief architect and later head of the municipal planning office, in 1924 also resigned as a result of the new housing policies, although he stayed active in the planning process. This switching of sides by Scheu and Loos, who resigned, frustrated with the bureaucratic hinders of municipal work, shows the willingness and idealism of many highly qualified professionals to actively engage themselves in the settlers movement, although this work supposedly did not supply the same security as working for the city did.

By 1922, the OeVSK had 50,000 members from 230 different coop-

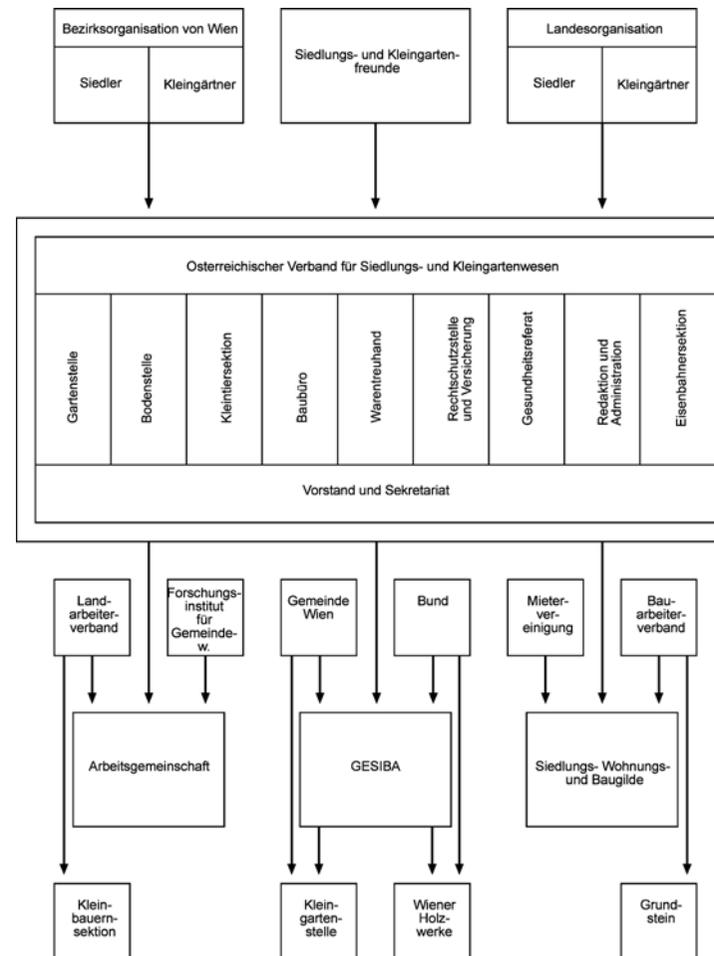
erative associations. As part of the process aiming to centralize the different organs involved in the settlements movement, the ÖSVK decided upon taking over the magazine "Der Gartenfreund", until then edited by the Zentralverband and until then an allotment gardeners magazine, and to call it "Der Siedler" and turning it into a paper not only for allotment gardeners, but also for settlers and dwelling reformers. The revised version was now edited by the Hauptverband in collaboration with the Forschungsintitut fuer Gemeinwirtschaft, which was then directed by Otto Neurath. This again shows Otto Neuraths strong influence on information flows, as he was one of the driving forces behind the unification of the different settlement associations.

Parallel to the OeVSK, the GESIBA, Public Utility Settlement And Building Material Cooperation, as a non-profit building enterprise, owned in part by the municipality and by the cooperative settlement associations, was founded. The GESIBA bought building materials centrally, at prices under municipal control and also carried out construction of settlement housings.

Neurath already in this phase noted the ideological endangerment of agro-romantic ideals and the settlers focus on attaining property. To him, cooperative thinking had two sides: the petty bourgeois organization of the municipality versus the drifting of mass organizations (Organisationstreiben breiter Massen).(36) To avoid this conflict, a solidarity between settlers and professional associations was mandatory, only to be solved by the establishment of a centralized economic organization of all departments.

Through the centralization of the settlers movement and the huge amount of homeless people, combined with the recessive economy in 1921, first unions were founded in the building sector, such as Grundstein, a non-profit building company or the earlier metioned GESIBA as part of the Siedlungs- and Baugilde (settler`s and building guild).

Neurath appears to have been a driving force in the creation of the gild. The entire organizational structure seems to have been his prod-



Source: Otto Neurath, Gildensozialismus, Klassenkampf, Vollsozialisierung, Dresden 1922

uct. In this way it is not surprising for him to become Secretary of the Siedlungs- and Baugilde. Neurath now had the opportunity, through his position and his journalistic efforts, to propagate the guild spirit. He was convinced of the applicability of the English guild socialism to the Austrian context. The guild socialism was a theory developed at the beginning of the twentieth century in England, aiming for industrial self-organization. The guild was a union for common interests, where the producer at the same time became owner of production resources. To Otto Neurath, guild socialism appeared to be a gratifying supplement to Central-European Marxism, as it did not end in a representation and critique of a capitalist economic order, but thoroughly described the immediate workday of a union and the politically active workforce in the framework of a socialist program.(37)

Neurath was impressed by the English model of guild socialism, successively putting all economic departments under proletarian control, however within a capitalist order. This progressive conquest of the capitalist system appeared to him more liable for success than single advances, which would only create "islands of common economy". The danger of the guild was to stop after the conquest of capitalistic companies. Neurath pointed out the possibility of the guild to overcome the market economy, which would imply the disappearance of purchase and sale, one of the main topics of his total socialization concepts. During a national guild congress all the successful guilds should fuse and create an economic power, applying a centralised plan economy.

In reality, Neurath had to go through a hard critique of his ideas, developed in the framework of the Baugilde. The bad financial situation of the time and the dependency on the municipality concerning the acquisition of funds, turned the Baugilde into a useless instrument.

In 1923, when Neurath's guild euphoria had passed, he stated: "This kind of organisational approach is always of value, as long as its long term effect is not overevaluated." Despite the failure of the Baugilde,

Otto Neurath continued until February 1925 in his function as secretary to the OeVSK. By 1921, the tasks of the Siedlungsamt (settlements department) were reduced to the allocation of land, the distribution of credits to cooperatives, the assistance in design and building control as well as the settlers welfare.

Although Neurath made no clear statement about his role during the founding of these organizations, it can be assumed that the successful concentration of the settlers interests was his primary goal, considering that every important decision was submitted to him as the general secretary of the OeVSK. The radical social reform potential of the movement could not have merged without Neurath's conception to turn the settlers and allotment gardeners into an organizations network, as the Social Democrats had demanded.

Typologies

Adolf Loos' "one wall house", also known as the "System Loos", designed for the Heuberg - Siedlung and patented in 1921, exemplifies one of many housing typologies developed for the Viennese settlements. To reduce material and labour costs, the outer walls were suspended from the foundations of the lateral walls by wooden beams, spanning the width of the house of 5.5m. This led to two significant changes - the stair case, positioned in line with the beams was now positioned parallel to the street façade and secondly, the gable roof was eliminated, as were the basement and the attic. In his presentation Loos foresaw the flat roofs as terraces.

The Heuberg-Siedlung was exceptional as the only Viennese settlement with flat roofs and also for the use of wooden shingle cladding, inspired by North American architecture.(38)

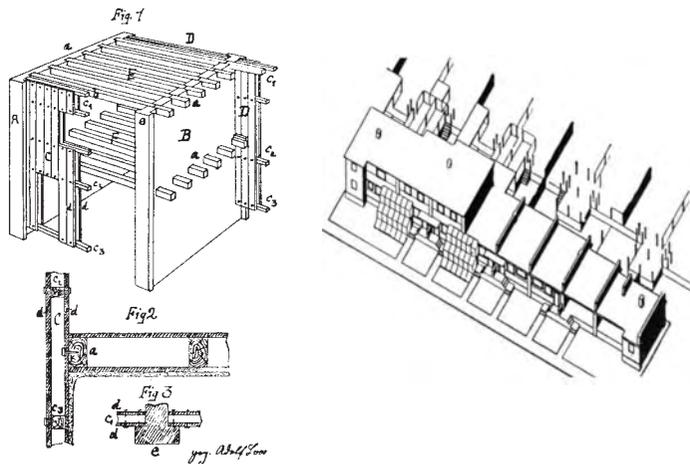
Loos, as chief architect of the estates office between 1921 and 1924 altogether designed about 40-50 different Siedlung housing typologies and was directly involved with the planning of four Siedlungen. To him, the emphasis lay on the architecture, opposed to Kampffmeyer, proponent of the garden city idea, focusing on urban



Grundstein, non-profit building company

Rudolf Loos
11. Februar
1921

Bauart
„Haus mit einer Mauer“
Blatt I



Loos' One-wall house and Heuberg Siedlung Isometry

design.

"To learn to live": Living space was kept at a minimum in order to accommodate the vegetable garden and domestic stables within the lot, ranging in size from 200 to 400 square meters. Adolf Loos' architecture for the settlement houses was much influenced by the German allotment-garden expert Leberecht Migge's ideas on the urban productive garden ("Jedermann Selbstversorger, 1919"), considering the garden as primary and the housing as secondary, as it enabled settlers' self-sufficiency.(39)

Cooperative Living

Hans Kampffmeyer and Otto Neurath very soon realized the potential of the cooperative settlements movement for a political reorganization of society, at least within Vienna.

Kampffmeyer considered the Genossenschaftshaus (cooperative house) as the center of intellectual and economic interests of the settlement community. In contrast to the former districts of mass dwellings, where families were living side by side anonymously, the settlers had already been working together for years to create their homes and cooperative facilities (cooperative houses, childrens playgrounds, consumption stores, etc.). Kampffmeyer pointed out that community was not abstract theory for the settlers, but present in their everyday lives and in that way a potential for further development.(40) According to Neurath, child care, orphans family care, youth organizations, art and education centers would increasingly be retracted from bureaucratic centralized social institutions to become tasks of the individual settlements.(41) In the future, centralism would not gratify human nature.(42) The settlement could be seen as a foreshadowing of a coming society, in which large organizations would disappear.(43)

Neurath continued to say, that the settlements associations believed in the slow disappearance of the city, while housing, administration and other instances related to activities from generating raw materials to the building of houses had already become tasks of the associations under a centralized organization. Neurath points out that those in



Siedlung "Hoffingergasse", Mandolinenorchester

favour of a true common economy will have to practice modesty, as the present situation could only provide for a variety of subsidiary forms of the longed for system. (44)

The cooperative settlements distinguish themselves not only by their market external work-creating measurements in combination with collective self-sufficiency programs, but also by creating other subsidiary forms of solidarity, independent of the municipal administration, such as kindergartens, playgrounds, orphanages, libraries and other sport and leisure facilities. One interesting aspect of a new understanding of the quality of leisure being the prohibition of selling alcohol on the grounds of the settlement.(45) Poverty was the major motor for securing living conditions, as the high unemployment and badly organized municipality made the self-help of the settlers mandatory. Not only did they build their own houses, but in the beginning also the needed communal infrastructure (such as streets, cleaning facilities, street lighting etc.) was provided by the settlers.

Facilities for medical support, health insurance and construction material were founded. In this way the settlements could certainly be considered autonomous, however financially they were reliant on municipal funding for inexpensive land, building subventions, tax and fee abolitions, securities etc..(46)"Heart and brain" of this infrastructural network was the Genossenschaftshaus (cooperative house), as "the center of independent administration, political debates, spread of knowledge, artistic event and parties", serving as a "city hall", recreation center, club, theater, concert hall and public university.(47)

The Genossenschaftshaus, which you could find in nearly every settlement, facilitated a main hall, administration rooms for the cooperatives, a "co-op"-supermarket and a library. If the money could not be provided for the realization of a new building, older ones would be adapted.

These communities differed, according to Neurath, from communal structures found in bourgeois-capitalist societies, which formed coincidentally or by external contracts, as they incorporated a true sense of community, exemplary for the coming society. To him, this phe-

nomenon of solidarity could be related much more to past relations based on religiously formed communities.(48)

Labour contribution : eight hours legislation

The economic system that derived from lack of money and the need to economize building costs was based on labour contributions by the settlers. 10-15 % of the actual building costs were covered by direct labour amounting to approximately 1600 hours. 80% of actual labour and 30% of the building costs were covered by labour contribution. The remaining amount was financed by government loans.(49)

Unskilled workers would prepare the building site. Artistic skills, such as painting murals and applying ornamental stucco would also be accepted. Since the eight hour shift was passed by legislation, the employed would work for 4 hours after their regular shift and 8 hour shifts on weekends, the unemployed would work full shifts 7 days a week.(50)

Adolf Loos continues in his text "Der Tag der Siedler" to comment on the eight hours work shifts: "(...) there are two methods to increase the sum. The first is that one assigns land to everyone who is willing to contribute to the production of foods. There are a hundreds of thousands in Vienna, millions in Austria, looking for gardening work in their leisure time, as they are not fully occupied in their job. `Eight hours for work, eight hours for play, eight hours to rest and eight shillings a day` is the English union saying. The eight hours `play` want to be applied usefully by many of our workers. The objection, that these eight hours harm the regular work because the worker strains himself in his garden and loses strength by this kind of work is wrong. Gardening is a great tonic method. There is no need to imagine how these eight hours `of play` would be used otherwise (...)".(51)

Before 1921, all work was done by settlers, but due to inflation the loss of value demanded immediate realization to avoid the shrink of loan. It became necessary to hire skilled workers to realize projects as quickly as possible. Before, the trade unions had been quite critical of the settlements funding through the contribution of their own labour force, not only as the eight hours legislation was undermined, but also since labour was taken from skilled workers. Also the idea of spending free time on attaining private property, instead of being politically active did not suite the unions ideas. After the alliance between the cooperative associations and the trade unions to hire skilled workers, however, the trade unions were in full support of the settlements movement.

The settlers were no longer solely working in an employee situation in their regular jobs, but were becoming an autonomous ownership-oriented society, that was learning economics without underlying it theoretically. This capitalist aspect which developed out of a lack of municipal supply of housing and food did not always cohere with the social democratic agenda, but was much more related to Neurath`s socio-economic theory of guild socialism, settlers not only being producers, but also consumers of their own housing, social institutions and food.

The end of the settlements movement

Due to the beginning world recession, after 1927, the settlements had started to become part of a work creating program, as the number of unemployed was growing. The last work creating settlement from this time was far from concepts of the beginning, as the lot size increased from 200 to 2000 square meters making row housing, as well as communal settlement structures impossible. As these were administratively organized measures to fight unemployment the communal facilities, as for example the self-administration of all garden-produce had disappeared.(52)

With the beginning of the large-scale community housing program in 1924, Neurath lost interest in the settlers movement. He also started

to distance himself from the goals of the OeVSK. Neurath, who was less interested in the garden city idea than in the common economic character of the settlers interests, remarked that "the building of settlements would not be able to cover the number of dwellings needed." He attacked the position of the settlers and allotment gardeners for their lack of proletarian solidarity. They should admit to function just as a part of a total proletarian community in the design process of the city".(53)

Aside from bureaucratic hinders leading to a break between Neurath and the settlements movement, this statement reveals a much deeper disappointment based on the discrepancy of Neurath's idea of the workers mass identity and their claim for individual fulfillment and self-government. It shows how his idea of the united proletarian force bound to create a new architectural expression neglected the workers orientation of bourgeois life styles. The centralization of the settlers organization led to a much broader representation of the settlers' differentiating ideals, which were very much expressed in the richness of variety the settlements incorporated, not only architectonically, but also culturally.

Neurath's idea of a centralized organization neglected the importance of identity beginning in the core of housing, much more than in the abstract idea of large scale awareness, essential to the formation of a new society. His categorization of the working class as an independent cultural entity avoided this phenomenon.

Generalarchitekturplan

Maybe due to this disappointment, Otto Neurath became involved in a less practical sense in 1924, developing the idea for a Generalarchitekturplan for Vienna, which very much incorporated the workers solidarity he had found lacking before. Yet, as this plan did not imply immediate realization, as the settlers needs always had, it enabled him to develop an outline for future Vienna, which did not have to incorporate the discrepancies he had experienced in the past

with the OeVSK and other associations, but foresaw a collaboration with architects only. In 1923, the OeVSK commissioned the five architects Adolf Loos, Josef Frank, Oskar Strnad, Josef Hoffmann and Peter Behrens to prepare an extensive development plan for Vienna, not only designating allotment garden and settlement zones within city boundaries, but to design an overall plan for future Vienna. The plan was reliant on subvention by the municipality. Otto Neurath, general secretary of the OeVSK at the time, outlined the purpose of the Generalarchitekturplan in the Arbeiter-Zeitung, demanding of it to ensure that "the extension of a great city like Vienna..(.) ought to be systematically carried out in a unified spirit and according to an overarching plan, while still allowing each architect to express his own personality and artistic vision, since only if such freedom exists can something vigorous and powerful be achieved."(54) Together with Franz Schuster, a sociologist and founder of the monthly magazine Der Aufbau, Neurath restated the importance of a planning office outside the Stadtbauamt, with one central planner to be appointed, as Martin Wagner for example, who had recently been appointed head of planning for Berlin or Ernst May in Frankfurt. Schuster, who moved on to work with May in Frankfurt, explained in the last issue of Der Aufbau that the city was to be seen as a "cultural, economic, and aesthetic unit" integrating residential, industrial, commercial and institutional buildings, in contrast to the Generalregulierungsplan (general development plan) of 1893, which only dealt with street plans, urban infrastructure, as well as land and lot division. New Siedlung houses were to be integrated in existing urban fabrics, allotment gardens protected, creating "green tongues" reaching into the inner districts of the city. High-rise buildings were to be erected within the already existent built up inner-city areas or along major traffic arteries.(55) Although residential areas were preferably low-rise settlements, a mix of high and low-rise housing of the city was envisioned.

The principal idea was quite parallel to the plan, which evoked from Otto Wagner's illustrated text Die Grossstadt: Eine Studie ueber diese



Terrassenhaus Project, designed by Oskar Strnad, 1923



perspective, center of projected XXII Vienna Municipal District by Otto Wagner

in 1911, incorporating a division into Bezirke (districts) with individual social and cultural infrastructures, such as parks, (public) gardens, playgrounds, schools, churches, traffic routes, markets, municipal buildings, department stores, centers for the handling of traffic, garages, morgues, even theaters, special museums, libraries, barracks, asylums, workshops, public halls, etc. connected by the metropolis' technical infrastructure. At this time Vienna's population amounted to around 3 Mio. inhabitants. As districts that had been neglected by previous bourgeois administrations, Neurath envisioned the first large scale building ideas that the proletarian government would approach were to be the traditional worker's districts Florisdorf, Favoriten, Ottakring and Hernals, as they already had wide streets, without slums and noisome narrow alleys, but were lacking gardens, cultural facilities and decent living quarters. These, and other districts (Bezirke) were to become autonomous "peripheral centers" of the socialist city, leaving the historic city center as a business district and establishing the outer edges of the city as new representational civic centers. These centers were to become so important and beautiful that they would even be visited by tourists.(56) In January 1924, Otto Neurath, Peter Behrens and Adolf Mueller (head of one of the largest cooperatives) presented a preliminary scheme for the Generalarchitekturplan at a public hearing in the Favoriten working men's home in Vienna, explaining the relationship of high-rise and low-rise buildings, allotment gardens and garden suburbs and their distribution across the city. On this occasion Neurath presented Oskar Strnads design for a specific site in the Favoriten district, explaining the extent of variety possible through the alternation of low-rise, high-rise and terraced houses located along main traffic arteries, in parks, as well as among mid-size commercial streets. City officials, as well as garden city advocates were invited to discuss the plan.(57) In "Staedtebau und Proletariat", even Neurath, until then a leading proponent of the settlements movement, acknowledged that "it would not be possible, given the historic conditions to meet the need for housing by building Siedlungen. There is not enough land; indeed, it

would perhaps be difficult immediately to create a sufficient number of well-functioning settlement associations to tackle the task. By the time satisfactory land-use reforms are in place, too much time will have passed. Therefore, even opponents of the traditional *Grossstadt*, who favour the settlement form of housing, must consider high-rise building for a while longer, and the representatives of the settlement and allotment garden movement must immediately come to terms with the high-rise issue. The question at the moment in Vienna is not whether to build apartment blocks, but rather where and in what form."(58) His implication of "for a while longer" suggests that this compromise of housing typology, he is asking the settlers to accept, as a temporary solution. The *Grossförmigkeit* of his vision for the socialist city of the future, however, as schemed in his idea for the *Generalarchitekturplan*, will still be bound to the capacities of the city. In this, it is not so clear, if Neurath assumes that those in favour of settlements will, due to education, adjust their preferences to the given or if he really believes in a national reform in land policy. In contrast to Behrens, Scheffler and Behrendt, associating the new large scale conception of the city to the centralization of capital and industry, Neurath associated it with "the spirit of the organized proletariat", adapting capitalist democratic structures into socialist ones. (59) He suggested that "the centralization that is characteristic of proletarian socialism is combined architectonically with ascendant democracy and self-government." To him the future city would "above all else be shaped by the modern global industrial organization of world wide business. Harbour installations, railway stations, silos, warehouses, factories, bold vibrating elevating railway lines, iron structures will characterize the future city; at particular points, for particular purposes, skyscrapers stretching proudly upward will be incorporated harmoniously into the total picture."(60) As the development of the *Generalarchitekturplan* was not supported by the municipality, Neurath completely turned his attention to the realization of the *Settlers and Urban Planning Museum*. In February 1925, Neurath was suspended from his function as secretary of the *OeVSK*

after conflicts with Adolf Müller and the allotment gardeners.

Gemeindebauten

By the district council decision of September 1923, the biggest Austrian communal housing program ever began. In less than 5 years, 25,000 apartments were to be built, designated for local demands and distributed at low prices. This was realized and even more dwellings were built. "Peoples Residential Palaces", like the socialists called them, appeared like the *Karl-Marx-Hof* in 1930. The *Gemeindebauten* were the largest housing program of Europe at this time and typologically mirror the political condition of Red Vienna within the black Austrian context between the wars. Much has been written about their typology and political significance, which would explode the topic of our work.

However, relevant, as hypothesized by Eve Blau in her comparison of the buildings' typology to Otto Neurath's *Isotypes*, is the strong correlation in the "means of conventionalised type-forms" applied. The linguistics of the *Gemeindebauten*, such as monumentality, gable roofs, balconies, arcades and portals, according to Blau, transport information, rooted in the historical context of the cities building tradition, are in their comprehensibility comparable to the universal legibility of the symbolism applied in the *Isotypes*. Both promoting a collective understanding, based on language, which the workers had been denied before. In relation to the *Isotypes*, social knowledge became accessible outside of an academic environment, comparable to the traditionally bourgeois symbolism embedded in the proletarian context of the *Gemeindebauten*.

As the architectural imagery used was very conservative, it may in this way be considered as a contrast to the program's social structure, which, also by introducing the idea of the *Gemeindekueche* (communal kitchen), implied a similar communal facilitation as the *Siedlungen*, yet without the dependency on the domestic family.



The housing program was exploited by the opposition. The Christian Democratic Party attacked the politics of the "Gemeindebauten", as their communal structure, opposed to the single family houses of the garden city, would destroy the family. By the creation of private property, as provided for by the settlements, the Social Democrats had feared that the development of property might lead to a change of political orientation among the owners. Similar topics were addressed by the Christian Democrats about this new social development, seeing the settlers as "happy" owners, soon to vote for the Christian Party.(61)

Werkbundsiedlung, Bauhaus and CIAM

Neurath was strongly opposed to the functionalist aesthetics applied to architecture, considering it a high art phenomenon, far from the current proletarians understanding. He justified the Viennese application of ornament, gaffel roofs and portals by architects as it cohered with the proletarians comprehension of these as symbols and demanded that a true architecture could only be developed by the proletarian class, as their architectural understanding would grow. (62) In his eyes, the architects were often blinded by the will to realize their ideas, wrongly considering themselves capable of teaching others how to live by inhabiting their buildings. The task to him being the architectural and social education of the working class to successively develop a true proletarian architecture. In this way, the modern society stood at the beginning of the formation of a new socialist city. To Neurath, social and economic changes were the basis for such a development, as he described in "Modern Man In The Making".(63)

He did not spare with criticism of the majority of architects involved, as they "due to a certain economic approach or carried by other principles want to act as the masters of man, not aware of exceeding their sphere of influence."(64) To Neurath, "housing only plays a modest role within larger radical changes"(65) and the "optimizing of technical solutions does not always cohere with achieving



Karl-Marx-Hof, Karl Ehn architect, 1927-1930



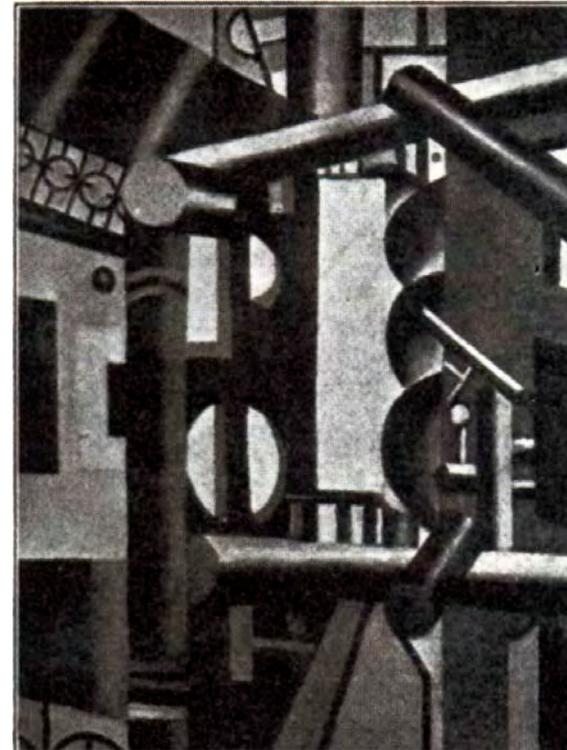
Ironing Room, Am Tivoli, 1931

a maximum degree of happiness."(66) Using the example of the modern kitchen, focused on rationalizing work processes, he questions, if standing in one spot opposed to moving around could actually be seen as an improvement. Functionalist aesthetics were also applied by avant-garde painters, such as Fernand Leger in his machine art in the painting "The Scaffold" shows, which had recently been exhibited in Vienna.

Neurath used this painting to point out the discrepancy between the workers logic of rationalization by his daily engagement with machines and political organization and the intellectual "romanti-

cism" of machine imagery applied by the constructivists. To him the representation of machine imagery in art did not coincide with the actual machine. "The appearance of function is not itself functionalism", just as little as the metaphor of a fire breathing dragon can convey about the technicalities steam-engine powered locomotive.(67) Nevertheless, Neurath was involved in the Modern Movement in different ways. According to Peter Galison, Neurath's collaboration with the Bauhaus was based on a mutual scientific approach, as well as his personal interest in arts, architecture and workers settlements, as shared by others in the Vienna Circle. The mutual envisioning of a modern society was strengthened by both groups' opposition to existing nationalist, anthroposophist and metaphysical tendencies. After exchanging lectures between Dessau and Vienna, the two groups had developed such strong bonds that, after fleeing the Nazis, even the New Bauhaus in Chicago adapted logical positivism into its general design agenda.(68) Neurath considered the Bauhaus as a school whose models of "furniture, fittings and type-models can be used by industry and the trades as prototypes for mass production."(69) And as much as he agreed with their "technical, socially driven agenda", he was, just like Josef Frank, much opposed to their design approach of "Neue Sachlichkeit", considering it superficial for the same reasons as stated above. About Gropius, who lectured in Vienna in 1924, Neurath wrote "He brought us nothing new. He himself is certainly not a significant architectural personality. But the fact that attempts are made to close the Bauhaus on political grounds is scandalous."(70) This negative assessment of Gropius, as a leading representative of the Bauhaus, may make it admissible to point out the discrepancy of Neurath's approach to that of the architectural avant-garde of the time, who equally claim the Viennese housing movement to lack innovation.

During his participation at CIAM IV in 1933, Neurath was the first non-architect to become member of the congress. His planned involvement in the illustration of architectural plans with ISOTYPES, as was foreseen for Van Estereen's design for the extension of



The Scaffold of Fernand Leger

Amsterdam was, however, never realized. As Enrico Chapel noted in Ten Plus One Neurath's democratic, participative approach did not cohere with the technocratic, elitist view of architects "as 'men of science' presiding over the destiny of our cities". Neurath believed in "continual mutation", promoting a "provisional assemblage of knowledge", opposed to the architects, who believed scientific knowledge to be an objective basis for "constituting the Science of Town Planning."(71)

Austrian Werkbundsiedlung Exhibition, Vienna 1932

Josef Frank, was, according to Otto Neurath, acquainted with him through his brother Phillip Frank, who was also a member of the Vienna Circle, as "the one socialist (architect), who tries to make his style accessible to young people, settlers, (and) municipal authorities."(72)

As a founding member of CIAM and the only Austrian invited to participate in the German Werkbund Siedlung Exhibition in 1927, Josef Frank was president of the Austrian Werkbund from 1930 to 1933.

In contrast to the Weissenhofsiedlung in Stuttgart, the Austrian Exhibition did not focus on building techniques and materials, but as Frank explained in his brief, each design was to "create the greatest living comfort that could be compatible with the principle of minimum expenditure of space."(73) Coherent to Neurath, Frank was also opposed to the machine aesthetic of "das neue Bauen" - his aim rather being maximum individuality within the limitations of spatial and financial components.

The Werkbund Siedlung did not supply an overall urban design. The seventy dwellings, although all row houses, rather showed a wide variety of types, including terrace housing, which had first been introduced by Loos in 1923, double-height living room spaces, open studio-living spaces and roof terraces. The typologies were not including apartment buildings, but only row houses, as the municipality stepped back from its involvement and the Heimbauhilfe

Aktion became engaged in the project, only capable of selling the houses instead of renting them out. Also the site was changed from the urban setting of the Triesterstraße to Hietzing, a suburban villa district.(74)

Neurath wrote about the Werkbund Ausstellung in Die Form, describing the exhibitions aim to show "how to increasingly lead a happy life in real apartments" versus the utopian approach of many architects, waiting to build their ideals regardless of the clients interests. As Neurath stated in "Rationalismus", the proletarian was slipping into the role of the client, as a preliminary step towards actually developing new forms, he had to learn the right of making choices. To Neurath, the pluralistic approach to allow many different typologies, opposed to only choosing one by majority becomes even more important in times where the outside world was increasingly becoming uniform. Again, this shows the importance of individual choice, allowing a variety of personal life forms versus the decision of the collective, reducing varieties to only one typology by democratic means. By applying the Proportionswahlrecht a maximum of individual choices could be taken into account.

For the interiors of the exhibited houses, he emphasizes the necessity to combine old and new, making it obligatory to apply a variety of forms and colors for new designs, which enable flexibility in combination, instead of again enforcing a unified style. The versatility of the rooms designated functions becoming the third aspect of personal choice underlined. Neurath's goal seemed to be to reduce the gap between architects, often wrongly claiming to become the inhabitants' teachers, and the actual desires of the working class, not wanting to live in specially developed workers housing, but much more aiming for bourgeois life styles. One way in which the exhibition coincides with this in his eyes is the model character of the fully furnished houses, allowing non-professional visitors to imagine actually living in these houses and the personal changes, which they would make in them. The high quality of materials chosen for the furnishings were applied in such simple ways that copies in materials of

lesser quality would still be useful. As one aim was to raise the living standard of the proletariat, the simplicity of form and construction applied in the Werkbundsiedlung would allow adaptation.

"Während die Nachahmung von Prunk zum Kitsch führt, ist hier fuer die fruchtbare Nachahmung ein reicher Schatz von Vorbildern gegeben."

To Neurath, a change in living customs is strongly related to previously succeeded social and economic changes. In times of strong political and social changes within society, the alterations of living customs become more problematic, as the desire for familiarity in a world of crucial change naturally grows. Coherent with his educatory approach applied in his housing exhibitions in Vienna City Hall, Neurath considers the *Ausstellungsrealismus*, practiced at the Werkbund exhibition, as being exemplary for the future. While most architects involved were preoccupied with the innovation of their designs and building techniques, Neurath's emphasis lied on the *Glücksmaximum* (maximization of happiness). This lead him to approach the exhibition with a completely different agenda. When asked to react to Lotz' criticism of the Vienna Werkbund exhibition, who described it as "unproblematic and traditional"(75) Neurath's comment is equally strong and one more time shows the discrepancy between the purely architectural approach, implying a change by building it, and Neurath's belief that architectural understanding by the working class must be allowed to develop carefully in order to appreciate certain programmatic and stylistic features. According to him, "Landesplanung, Staedtebau, Wohngestaltung haengen von dem Schicksal der Gesellschafts - und Wirtschaftsordnung ab. Ihre fernere Zukunft wird durch den Sieg des Proletariats bestimmt, ihre Gegenwart durch die Kaempfe um diese Zukunft." He even takes it as far as considering the housing - and clothing-reform, as well as other reforms as a "Lebensreform Opiat" (reform opium), distracting from the actual work on social change. Housing is a political issue, and as much as the post war housing situation in Vienna was in need



Werkbundsiedlung, 1932

of an urgent reform, Neurath considered the break with certain traditional values as something not to be forced upon the workers, but as a gradual process steered by the development of awareness for their own situation. Also he warned that a break with the thoughtless inheritance of traditions does not imply a break with all traditional values, only for the sake of innovation.

It is not clear, if Neurath's defensive reply to the criticism of the Werkbund Siedlung, whose entire structure was not adequate for workers housing, was only a rhetorical reply to a principal debate lead many times before with architects, or if his friendship to Josef Frank led him to ignore the obvious unsuitabilities, as basic as the units sizes (Haerdtl 125 square meters and Frank and Rietveld 107 square meters), and the preference of single family housing opposed to high rise buildings in a time of a worldwide recession. Although the 1:1 model character of the Werkbund Siedlung, as an educational facility was given, the question remains, what was actually to be learned by the proletarian visitors, as the viewing might have fancied their bourgeois phantasies, but had few parallels to their actual possibilities. Neurath seems to oversee this lack of proletarian character of the Werkbundsiedlung, only consisting of single family homes set up to be sold after the end of the exhibition.

Education and Propaganda

The origins of the Austrian Social Democrats evolved out of nineteenth century worker's educational institutions, as they were the only organized labour associations allowed during the Habsburg Empire. Historically, public education and political dissemination had

in this way always been closely related to one another, blurring the boundaries between neutral education and the spread of information as a political tool. The housing program with its social and communal facilities not only assimilated the workers in a physical way, but also very strongly by the communication machine which supported it. The new clinics, libraries, child care centers, theatres, parks, and of course apartments were not only experienced by mere use, but through exhibitions, publications, ceremonies etc. An immensely productive apparatus of photographers, journalists, painters, carpenters etc. was involved in the documentation of every visible sign, which would propagate the commencing realization of a new society. The housing program was in this way not only serving the need for shelter and communal infrastructure, but also as content for the Social Democratic propaganda machine. Neurath's intellectual engagement in the settlers' and later the proletarians' education affirms the "combined effort" applied to lead the proletariat to socialism and power. His frequent articles for proletarian newspapers, such as *Der Arbeiter*, during his involvement in the settlements movement, often imply what proletarian identity supposedly incorporated. He presupposed specific reactions of the reader, who, taking the title of the paper literally seemed to have been a member of the working class, and used these as a basis for the coming of a future society. These articles are far from being neutral or objective, but are written in a way that implies reliable reaction on behalf of the worker, almost becoming like a religious prophecy.

"Die Enge des familienhaften Daseins ueberschreitet der Mann und die Frau aus der Massenfront sofort, wenn er an seine Gewerkschaft, an den Zusammenschluss des internationalen Proletariats denkt. Keine Konstruktion ist ihm zu kuehn, wenn sie Wirklichkeitscharakter traegt. Die Dimensionen seiner Sehnsucht, seiner Solidaritaet, seines Willens sind denen des Trustmagnaten ebenbuertig. Nicht auf einmal wird sich der neue Geist auswirken.



Workers Libraries in Vienna, 1929

Aber immer staerker und staerker wird die Geisteswelt der Großorganisation und der ihr entsprechende Baustil, ein Spiegelbild der wirtschaftlichen Grossorganisation, Leben gewinnen. Der Tag ist da wo diese Fragen unmittelbare entscheidende Bedeutung haben."(76)

After the success of the housing exhibitions and resignation from the OeVSK in 1924, Neurath changed his further focus to the, as he described "intellectually more gratifying problem" and also more objective task of developing a museum. Aiming to educate the public on the housing program, its achievements and further goals, actual building or settlement plans should be supplemented by social statistics to correlate "between new types of building and family life, between city planning and the communal standard of living, production, transportation and other social elements".(77) Life situations would become comparable using "a standard of life silhouettes" such as food, housing and health indicators. Comparing consequences of various propositions would lead to organized rational planning. The housing exhibitions presupposed the founding of the permanent Museum For Settlement And Housing in Vienna City Hall in 1923, which a year later became the Social And Economic Museum, broadening its focus from settlers' concerns regarding housing to all subjects regarding the social condition, such as hygiene, social statistics and history . Although, Neurath's Social and Economic Museum, which opened in 1924, was located in the City Hall of Vienna and supported by the social-democratic government to educate and inform the public, Neurath already made it clear during his participation in the Munich Revolutionary Government, that he considered himself as a "technician of social construction", free of taking a political position, only neutrally contributing to the necessity for social improvement by means of his scientific approach. According to Neuraths understanding of science, only by awareness of their own state of being would the proletariat begin to autonomously develop a true future society and inclined to that, as he proclaimed in the Generalarchitekturplan, a new form of architecture.

To visualize these statements as well as statistical data, Neurath developed the Wiener Methode der Bildstatistik, which became known as the ISOTYPE pictorial language (International System Of Typographic Picture Education) in 1935. It idealistically allowed all viewers to understand single images of quantitative data within 3 glances. "At the first look you see the most important points, at the second, the less important points, at the third the details, at the fourth nothing more - if you see more, the teaching picture is bad." The internal logic of the Isotypes was structured by dominant and qualifying figures, which, when applied repetitiously, would represent statistical data.(78) The Isotype pictorial language backed Neurath's theories of humanizing knowledge to the extent of making it accessible to everyone, regardless of social or cultural background, as it was not only to be comprehensible, but also fun. He developed the Isotypes together with a team of graphic designers headed by the Swiss and German artists Erwin Bernath and Gerd Arntz. The idea was to use pictures to make different kinds of data universally understandable. "Words make division, pictures make connection."(79) In contrast to his organizational involvement with the settlements movement, bound to the city of Vienna, the Isotype language allowed Neurath to think not only in specifically regional or national terms, but to incorporate all scales of society in his statistical data. Neurath considered communication as the prerequisite for "the unification of mankind..... towards a unified economy, based on a scientifically organized distribution of goods on international grounds."(80) He did not consider scientists, trained to discover as many alternatives as possible, as particularly able to select only one alternative for others with different desires and attitudes, but considered this to be a decision of the collective. By applying a universal pictorial language to all data, experts as well as non-professionals would both be able to reflect on and react to social correlations. The individual ought to develop within the community. The preconditions for this development must already be grounded in the planning. For an organized humanisation by democratic means, visual education will enable the



Exhibition in front of Vienna cityhall, 1923

individual to make a qualified decision. Neurath believed all decisions to be influenced by the "auxiliary motif", based on the "personal path of life" as the smallest entity of pluralism - a natural consequence of this being a democratic society. Neurath promoted the humanisation of language, as it would imply the procedure of combining the simplest terms, based on familiar knowledge and the vocabulary of the people to explain the most complicated, instead of popularisation, solely translating the highest level of scientific formulation into popular language.(81)

"Museums of the future, anyhow ought not to be as I should like to have them, but as the visitors and users would want them, if they knew what makes a museum."(82) Neurath developed a museum concept coherent to the ideas implemented in the Isotypes, aiming for educational access to mass society. The museum was open in the evening and on weekends to enable workers to visit in their free time. Also the exhibited objects were to three-dimensionally transport information in a very legible way. 1:1 models of settlers houses, but also more abstract architectural models in a smaller scale were shown within the housing exhibitions. By using plexiglas to show the different floors of a model building, the "inexperienced eye" would be able to systematically understand the composition of the building and would be prepared to read the plan panels, as they had an understanding of how the different floors were connected.(83)

Also for the museum's structure Neurath propagated central planning, "...only through a unified, planned, central control of all museums and educational institutions is it possible to lead the public with the greatest benefit to its education from one museum to another, and thus to make the individual more and more familiar with the world in which he lives. Museums, exhibitions and periodicals might be regarded as three different means of education with the identical purpose of making him less afraid of the world." Within the museum the complex information, as delivered by the scientific specialists, had to pass the transformation department, which, before sending it to the technical department for realization, would convert it accord-

ing to the terms of a unified representational system.(84)

Neurath did not only consider the unified pictorial system as the most effective method to transport information for adults, but also applied the Isotype Pictorial Language to a school book, first published in 1933. Scientific analysis of the pictorial language by Dr. Helmut Bracken of the Department For Psychology at the Technical University Brunswick had supposedly proven that the information incorporated in Isotypes could be remembered two and a half times as well as ordinary statistical graphs.(85)

Conclusion

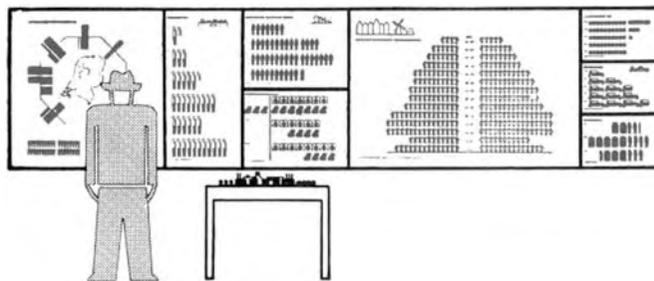
Neurath's position seemed to vary from one involvement to another. Sometimes his interventions were successful, sometimes partially, sometimes they failed. Although, his interventions were always seemingly pragmatic, they were at the same time informed by his theories and convictions. As modernization and science were considered as collective processes, his theoretically motivated intervening in specific situations was, even in case of failure, not a hindrance to the broader development. He realized that at certain moments one would have to intervene temporarily to improve a specific situation.



Museum for Housing and Settlement, 1925



Exhibition of new buildings erected by the municipality of Vienna, 1926



example of display techniques employed at GWM by Otto Neurath, 1936

In contrast to his organizational involvement in the settlers associations, the International Isotype Institute and the Viennese Museum and travelling exhibitions were more than an intervention, as they enabled him to share his knowledge in educating the people to understand larger processes on a much broader scale. The museum's structure, as well as the Isotype Pictorial Language were based on a universal method of information and Neurath no longer exposed to local subjectivity. His involvement in the Settlements movement was not a mere coincidence, but a reaction to a state of emergency. If there would have been a draught at the time, Neurath, as a "social technician" or a "poly math" would have most likely been just as involved and capable of compromising his ideas to the specific case.

What characterized all of his participations was his ability, to very non-dogmatically apply his expertise to the specificity of the situation. When he realized that his war economy theory was not applicable, as there was no war to apply it to, he changed it to a concept of full socialization relevant in times of peace. As the Social Democrats reclined to Vienna and Neurath was expelled to Austria after his participation in the Munich revolutionary government, he again modified his concept from a national to a communal level, from a full socialization to an administrative organization model of self-sufficiency derived from English guild socialism. When it became obvious, that lack of space within communal boundaries and also lack of finance and time would make the erection of further settlements uneconomical, Neurath, in his outline for a Generalarchitekturplan, began to propagate Grossförmigkeit, seeing the future city as a mirror of the largeness in scale inherent to the workers movement and accusing those still favouring the idea of owning a settlers house with a garden for lacking proletarian solidarity. This was the same largeness incorporated in the typology of the Gemeindebauten. When the idea of a Generalarchitekturplan was not supported by the municipality, Neurath again changed his focus to the erection of the Social And Economic Museum and maybe his most relevant achievement today, to the development of Isotypes.

Neurath conceptionally contributed to the organizational structure of the settlers organs, which in the end failed, due to external circumstances. Although, the unification of the various cooperative associations was certainly his achievement. His method of exhibiting the settlers momentary condition and interests was, however, successful in a more fundamental way. The development of Isotypes and of a new museum concept enabled him to escape the political confrontation and still find municipal support. The museum can be seen as an enclave within the movement, as it was an entity of its own and freed Neurath from the boundaries of spatial politics on a communal level. His belief of facilitating the public with education was very much grounded in his anti-philosophical conception of science. Science, to him, was a process steered by everyone. This democratic view was supported by his museum concept, giving society the necessary sociological background to develop. Fundamental for his success was his insight that socialization was a process steered by the masses. Facilitation of any sort, be it knowledge or housing or political structures, would therefore have to appropriate the current standing of mass society. As he later wrote in "Modern Man In The Making", the greatest danger for a nation would be to adopt rules at once without "examining them at leisure" and "slowly acquiring a scientific attitude" derived from "tradition, education and social circumstance". He considered a "protracted comprehensive social and personal training indispensable" starting from the traditional behaviour of a society and to do so he found it necessary to investigate the non-scientific phenomena inherent to a specific culture.(86)

The non-elitist approach chosen by Neurath to steer the process was very opposite to the rest of the modern movement of the time, as the general approach rarely related to the society's current standing, but implying a much more dialectic approach, isolated their actions from mass culture.

Neurath believed that science could primarily contribute to "the abolishment of war, unemployment and oppression, which combined with a profit-oriented system" could be considered the "main characteris-

tics of the current social environment".

To him, there was no lack of goods, but only of scientific management in producing and distributing them and that conflicts resulted from the organization process. Modern society was characterized by a decrease in birth rate and infant mortality, parallel to an increase in literacy, suicide rates, mechanization and urbanization, regardless of social or political order, generating an overlapping of generations. Pensions, the amount of work hours and a balance of resources were reliant on a scientifically organized society. How to increase the production of food, social and cultural infrastructure, while reducing working hours, accidents, unemployment and diseases were the questions implemented in the planning of a future society, which Neurath imagined to be a global industrial community. He criticized that business and exchange was always bound to national institutions, instead of organizing it internationally according to its correlations:

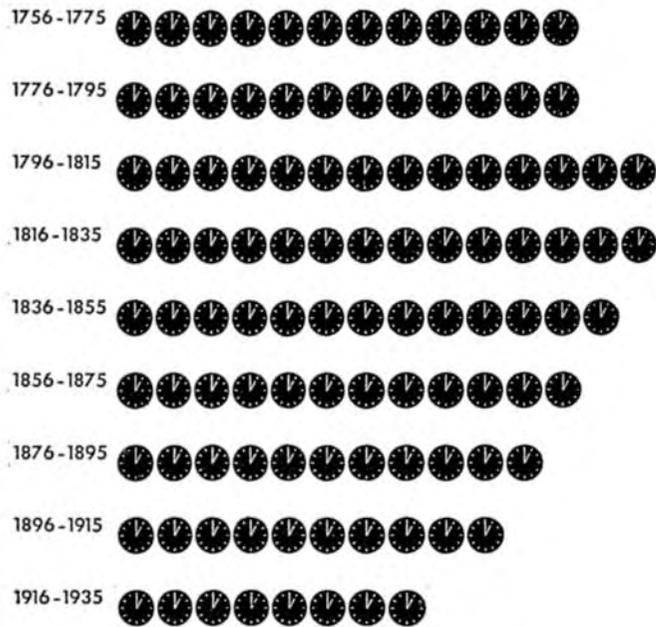
"If a planned economy were a universal institution, the making of good livelihood might then satisfy all important human needs, and war would become but a destroyer."(87)

These short excerpts of "Modern Man In The Making" aim to show the vastness of Neurath's interpretation of statistical data. In combination with his scientific understanding of society it enabled him to depict a future society which is in many ways proven right today. His criticism of the lack of integrating migration in international planning in his time, as well as his insight that upper and lower classes will migrate more than the academic middle class and that "hoboes, as the fifth estate will constitute a part of every glamorous metropolis" are all aspects we can find in our current society.

Aware of arising fascism, Neurath promoted the internationalisation of pictorial statistics by founding institutes and organizing exhibitions abroad. Due to the political situation, Neurath was forced to emigrate to The Hague in 1934, where the "Foundation For Visual

Sweden.

Working Hours in Manufacturing Trades



Each clock represents one working hour per day

Suicides



Each cross represents 25 suicides per 1 million population

Birth-Rates



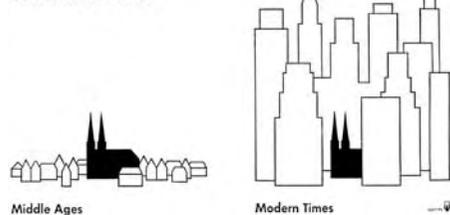
Each star represents 5 births per 1000 population



Silhouettes



Silhouette of a Town



Otto Neurath: Modern Man in the Making, 1939

Education" was to become the platform for further activities of the encyclopaedia movement as well as of pictorial pedagogies. Between 1935 and 1941, Neurath organized six international congresses for the unity of science in Paris, Copenhagen, Cambridge, Harvard and Chicago. In 1937 he founded the Institute for the Unity of Science in The Hague and Olga died.

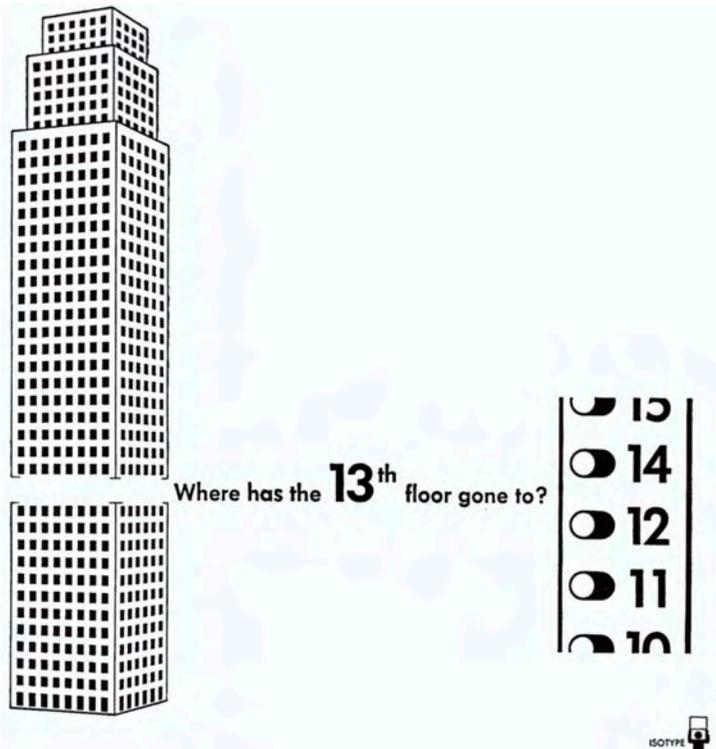
After the invasion by German troops in 1940, Neurath and Marie Rademeister, whom he would later marry, fled to England, where they were, due to the laws of the time, considered German citizens and incarcerated in Pentonville prison on the Isle Of Man. The English philosopher Susan Stebbing, supported by a letter from Albert Einstein, enabled Neurath's release in 1941.

Between 1941 and 1945, he worked as a lecturer at the University of Oxford and became social advisor to the town council of Bilston for a city renewal project.

He died of heart failure on December 22, 1945, in Oxford.

Notes

1. Stadler, Friedrich and Nemeth, Elisabeth (1996): Encyclopedia and Utopia, Kluwer Academic Publisher
2. Neurath, Otto (1925): Wirtschaftlichkeitsbetrachtung und Wirtschaftsplan, Berlin
3. Uebel, Thomas and others (1996): Otto Neurath: philosophy between science and politics, Cambridge
4. Neurath, Otto (1919): Through war economy to Economy in Kind
5. Neurath, Otto (1909): die Kriegswirtschaft, Jahresbericht der Neuen Wiener Handelsakademie, Vienna, p.16
6. Neurath, Otto (1914): Einführung in die Kriegswirtschaftslehre, Mitteilungen aus dem Instanzwesen, Vienna, p.103
7. Neurath, Otto (1909): die Kriegswirtschaft, Jahresbericht der Neuen Wiener Handelsakademie, Vienna, p.96
8. Neurath, Otto (1914): Einführung in die Kriegswirtschaftslehr, Mitteilungen aus dem Instanzwesen, Vienna, p.106
9. Neurath, Otto (1919): Wesen und Weg der Sozialisierung, Gesellschaftliches Gutachten vor dem Münchner Arbeiterrat Januar 25, 1919, Munich, p.209



10. Neurath, Otto (1919): Wesen und Weg der Sozialisierung, Gesellschaftliches Gutachten vor dem Münchner Arbeiterrat Januar 25, 1919, Munich, p.226
11. Neurath, Otto (1919): Wesen und Weg der Sozialisierung, Gesellschaftliches Gutachten vor dem Münchner Arbeiterrat Januar 25, 1919, Munich, p.213
12. Neurath, Otto (1919): Wesen und Weg der Sozialisierung, Gesellschaftliches Gutachten vor dem Münchner Arbeiterrat Januar 25, 1919, Munich, p.227
13. Stadler, Friedrich and Nemeth, Elisabeth (1996): Encyclopedia and Utopia, Kluwer Academic Publisher, p.208, Andreas Faludi quoting Otto Neurath, 1912
14. Stadler, Friedrich and Nemeth, Elisabeth (1996): Encyclopedia and Utopia, Dordrecht p.19
15. Kolakowski, Leszek (1968): Positivist Philosophy From Hume to the Vienna Circle, Harmondsworth, p. 207ff
16. Stadler, Friedrich and Nemeth, Elisabeth (1996): Encyclopedia and Utopia, Dordrecht p.235
17. Galison, Peter (2001): Aufbau / Bauhaus, Logischer Positivismus und Moderne, Arch+, 156
18. Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT, p.2
19. Marcuse, Peter (1986): A Useful Installment of Socialist Work; Housing in Red Vienna in the 1920s, in Rachel G. Bratt, Chester Hartman, and Ann Meyerson, eds., Critical Perspective on Housing, Temple University Press, p.565
20. Kampffmeyer, Hans (1926): Siedlung und Kleingarten, p.6
21. Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT, p.43
22. Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT, p.46
23. Der Aufbau (Newspaper), nr. 4, 1926
24. Robert Hoffman: Proletarisches Siedeln- Otto Neuraths Engagement für die Wiener Siedlungsbewegung und den Gildensozialismus von 1920 bis 1925
25. Niekisch, Ernst (1958?): Gewagtes Leben, Begegnungen und Begebnisse, Köln, Berlin, p.57
26. Robert Hoffman: Proletarisches Siedeln- Otto Neuraths Engagement für die Wiener Siedlungsbewegung und den Gildensozialismus von 1920 bis 1925
27. Neurath, Otto (1922): Vollsozialisierung und Gemeinwirtschaftliche Anstalten, der Kampf, nr.15, p.45-60
28. Schütte-Lihotzky, Margarete: Bauwelt Nr.42, November 1981
29. Loos, Adolf (1921): Der Tag der Siedler
30. Novy, Klaus and Förster, Wolfgang (1985): Einfach Bauen, Wien
31. Neurath, Otto (1923): Österreichs Kleingärtner- und Siedler- Organisation, p.40
32. Helmer (1926): 81
33. Novy, Klaus and Förster, Wolfgang (1985): Einfach Bauen ,p.30
34. Novy, Klaus and Förster, Wolfgang (1985): Einfach Bauen, p.44-52
35. Novy, Klaus and Förster, Wolfgang (1985): Einfach Bauen, p.38
36. Neurath, Otto (1923): Österreichs Kleingärtner- und Siedler- Organisation
37. Neurath, Otto (1922): Reichsgilde, Der Kampf
38. Rukschcio, B. Schachel, R. (1982): Adolf Loos, Residenz Verlag
39. Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934,MIT, p.100/101
40. Kampffmeyer, Hans (1926): Siedlung und Kleingarten, p.73
41. Neurath, Otto (1923): Österreichs Kleingärten- und Siedlerorganisationen
42. Neurath, Otto (1922) ?
43. Neurath, Otto (1923): Österreichs Kleingärten- und Siedlerorganisationen
44. Neurath, Otto (1923): Österreichs Kleingärten- und Siedlerorganisationen

45. Neurath, Otto (1923): Österreichs Kleingärten- und Siedlerorganisationen
46. Novy, Klaus and Förster, Wolfgang (1985): Einfach Bauen
47. Festschrift o.J ?
48. Neurath, Otto (1923): Österreichs Kleingärten- und Siedlerorganisationen, p.39
49. Marcuse, Peter (1986): A Useful Installment of Socialist Work; Housing in Red Vienna in the 1920s, in Rachel G. Bratt, Chester, p.566
50. Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT
51. Loos, Adolf (1921): Der Tag der Siedler
52. Novy, Klaus and Förster, Wolfgang (1985): Einfach Bauen, p.30
53. Neurath, Otto (?): Generalarchitekturplan
54. Das neue Wien 1:274 in Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT, p. 99
55. Siedler und Kleingärtner 3, nr.12, 1923, p.1 and Siedler und Kleingärtner 4, no.1, 1924, in Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT, p. 99
56. Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT
57. Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT
58. Neurath, Otto (1924): Städtebau und Proletariat
59. Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT
60. Neurath, Otto (1924): Städtebau und Proletariat
61. Novy, Klaus and Förster, Wolfgang (1985): Einfach Bauen, p.37
62. Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT, chapter 9
63. Neurath, Otto (1939): Modern Man In The Making, Knopf Verlag, 2. edition
64. Neurath, Otto (1932): Die Internationale Werkbundsiedlung 1932 als "Ausstellung", Die Form 6
65. Neurath, Otto (1932): Unproblematisch und Traditionsbetont ?, Die Form 7
66. Neurath, Otto (1932): Unproblematisch und Traditionsbetont ?, Die Form 7
67. Neurath, Otto (1926): Aufgaben des Gesellschafts- und Wirtschafts- Museums in Wien, Der Aufbau, 8/9
68. Galison, Peter (2001): Aufbau / Bauhaus, Logischer Positivismus und Moderne, Arch+, 156
69. Neurath, Otto (1926): Das neue Bauhaus in Dessau, Der Aufbau, no. 11/12
70. Neurath to Roh, letter (1924), Roh Collection, GRI
71. Chapel, Enrico (1995): The International Pictorial Language as a Notational System for town planning, Ten Plus One, 3, p.107-125
72. Neurath to Roh, letter (1924), Roh Collection, GRI
73. Achleitner, Friedrich , "The Österreichischer Werkbund and Its Relationship with the Deutscher Werkbund" in Burckhardt, The Werkbund
74. Blau, Eve (1999): The Architecture of the Red Vienna 1919-1934, MIT, p.132/133 (Form 8, 32)
75. Neurath, Otto (1923): Arbeiter Zeitung, Oct. 24th
77. Neurath, Otto (1937): Visual Representation Of Architectural Problems, Architectural Record
78. Neurath, Otto (1936): International Pictorial Language
79. Neurath, Otto (1936): International Pictorial Language
80. Neurath, Otto (1939): Modern Man In The Making, Knopf Verlag, 2. edition
81. Faludi, Andreas: Otto Neurath and Planning Theory in Nemeth E., Stadler F. (1996): Encyclopaedia and Utopia, Kluwer Academic Publisher
82. Neurath, Otto (?): Museums Of The Future, De Opbouw 8, van Eesteren archive
83. Neurath, Otto (1937): Visual Representation Of Architectural Problems, Architectural Record
84. Neurath, Otto (?): Museums Of The Future, De Opbouw 8, van Eesteren archive
85. Neurath, Otto (1934): Bildstatistik nach Wiener Methode in der Schule, Deutscher Verlag für Jugend und Volk, Wien-Leipzig
86. Neurath, Otto (1939): Modern Man In The Making, Knopf Verlag, 2. edition
87. Neurath, Otto (1939): Modern Man In The Making, Knopf Verlag, 2. edition

Nemeth E., Stadler F. (1996): Encyclopaedia and Utopia : The Life and Work of Otto Neurath (1882-1945), Kluwer Academic Publisher

Neurath M., Cohen R. S. (1973): Otto Neurath - Empiricism and sociology, D. Reidel Publishing Company

Neurath, O. (1923): Österreichs Kleingärtner- und Siedler- Organisation, Kommissionsverlag Wiener Volksbuchhandlung

Neurath, O. (1939): Modern Man In The Making, Knopf Verlag, 2. edition

Novy K., Förster W. (1985): Einfach bauen, Verein für moderne Kommunalpolitik

Tafari M. (1980): Vienna Rossa: la politica residenziale nella Vienna socialista, 1919-1933, Electa Editrice

Uebel T.E. (1992): Over Coming Logical positivsm from within : The emergence of Neurath's naturalism in the Vienna circle's protocol sentence debate, editions Rodopi B.V.

Hoffman R.(?): Proletarisches Siedeln- Otto Neuraths Engagement für die Wiener Siedlungsbewegung und den Gildensozialismus von 1920 bis 1925

Bibliography

Bleu E. (1999): The Architecture Of Red Vienna 1919-1934, MIT

Cartwright N., Cat J., Uebel T. (1996): Otto Neurath - Philosophy Between Science and Politics, Ideas in Context, No 38, Cambridge University Press

Cohen R.S., Neurath M. (1983): Otto Neurath - Philosophical Papers, 1913-1946, D. Reidel Publishing Company

Haller R., Rutte H. (1981): Otto Neurath - Gesammelte philosophische und methodologische Schriften, band 1 and 2, Verlag Hölder-Pichler-Tempsky

McGuinness B. (1987): Unified Science - The Vienna Circle Monograph Series, D. Reidel Publishing Company

Nemeth E., Heinrich R., Soulez A. (1999): Otto Neurath - Rationalität, Planung, Vielfalt, R. Oldenburg Verlag

Nemeth E., Neurath P. (1994): Otto Neurath oder die Einheit von Wissenschaft und Gesellschaft, Böhlau verlag

Biography

1882	born on December 10 in Vienna
1901-05	studies in mathematics, science, national economics and history at the University Of Vienna and University of Berlin, Dr. Phil (Berlin)
1906	military service
1907	marriage to sociologist and women`s rights activist Anna Shapire (until her death in 1911)
1907-14	teacher for national economics at the Neue Wiener Handelsakademie
1911	birth of son Paul
1911-13	travels in Eastern Europe and Balkans, contract with Carnegie Endowment for International Peace
1912	marriage to the blind mathematician Olga Hahn, sister to Hans Hahn (until her death in 1937)
	mathematical publications with Olga Hahn before the war
1914-18	war service at Eastern Front and in Vienna , also habilitation at Heidelberg University and call to direct a Museum on War Economy in Leipzig
1918	member of Munich Revolutionary Government

1919 trial, return to Vienna
 1919-24 active participation in housing movement in Vienna
 1921-24 secretary general to the Allotment-Settlements-Organization of Vienna
 1923 foundation of Museum For Settlement and Housing
 1924-34 foundation and direction of the Social and Economic Museum in Vienna
 1929 publication of the manifesto Wissenschaftliche Weltauffassung: Der Wiener Kreis
 1929 lectures at Bauhaus
 1931 only non-architectural member of CIAM
 (Patras, CIAM IV)
 1933 foundation of the International Foundation for Visual Education at The Hague
 1934 emigration to The Hague, NL
 1934-40 continuation of visual education (ISOTYPE), organization of the International Unity
 Of Science movement
 1940 flight to England and internment
 1941 married to Marie Reidemeister
 1943-45 lectures at Oxford, GB
 1945 advisor for "social planning" to the City Council of Bilston, England
 1945 died on December 22nd of heart failure in Oxford, England
 1945 died on December 22nd of heart failure in Oxford, England