The Vienna Method in Amsterdam: Peter Alma's Office for Pictorial Statistics

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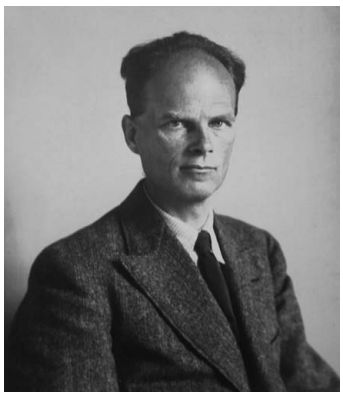

Figure 1
August Sander, photograph of Peter Alma, late 1920s. Private collection. Reproduced by permission from Sinja L. Alma and Peter L. Alma.

The Dutch artist and designer, Peter Alma (see Figure 1), is today remembered for his 1939 Amstel Station murals, as well as for his earlier involvement with the Cologne-based Gruppe progressiver Künstler [Progressive Artists' Group]. Yet Alma also produced an extensive body of information graphics over the course of the 1930s. Working first in Vienna at the Gesellschafts- und Wirtschaftsmuseum [Social and Economic Museum] (GWM) and later setting up an independent design firm in Amsterdam, Alma became one of the principal Dutch practitioners and promoters of the design approach known as the "Vienna Method of Pictorial Statistics." To date, most accounts of this method's history have focused on its chief inventor, Austrian social scientist Otto Neurath, and his principal collaborators, Germans Marie Neurath (née Reidemeister) and Gerd Arntz.[1] Yet Alma's work in pictorial statistics also constitutes a substantial chapter in this history, although it has not yet been fully appreciated or adequately documented.[2] In addition to providing an account of Alma's role in the development and dissemination of the Vienna Method, this essay assesses the nature of Alma's contribution to the field of information design and considers the place of his pictorial statistics work within his larger oeuvre.

Peter Alma (1886–1969): A Biographical Sketch

Following his initial artistic training, from 1904 to 1906 at The Hague's Koninklijke Academie voor Beeldende Kunsten [Royal Academy of Fine Arts], Alma traveled to Paris to continue his studies at the Académie Humbert. In his paintings from this period, Alma drew on the various post-impressionist tendencies then prevalent among Parisian artistic circles and later (after having made the acquaintance of several avant-garde artists, including Fernand Léger, Diego Rivera, and Piet Mondrian) incorporated many of the formal strategies associated with cubism. When the First World War broke out in 1914, Alma returned to the Netherlands and became an active member in the Laren-based artistic circle that included Mondrian and Bart van der Leck (both of whom later collaborated with Theo van Doesburg in the

1 For a detailed history of the Vienna Method, see Christopher Burke, Eric Kindel, and Sue Walker, eds., *Isotype: Design and Contexts, 1925–1971* (London: Hyphen Press, 2013).

2 With the exception of Erik Luermans' 1978 master's thesis and two short booklets accompanying solo exhibitions in the 1960s, art-historical literature has generally treated Alma's extensive artistic career in a cursory manner, principally through the inclusion of his work in several group exhibitions and survey texts. See Erik Luermans, "Peter Alma: Een documentair verslag van een beeldend kunstenaar in het interbellum" [Peter Alma: A Documentary Account of an Artist in the Interwar Period] (master's thesis, Universiteit van Amsterdam, 1978); *Peter Alma, 1886–1969* (Amsterdam: Kunsthandel ML de Boer, 1975); H.L.C. Jaffé, *Overzichttentoonstelling van schilderijen,*

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establishment of De Stijl). However, after the Russian Revolution in 1917, Alma began to distance himself from what he perceived as De Stijl's overly narrow formalist concerns and sought to introduce themes of a more explicit social and political character into his work. Further inspired by the revolutionary wave that had engulfed much of central Europe in the aftermath of the war, Alma joined the Dutch Communist Party (CPH) in 1918 and aimed to bring his artistic activity into the service of revolutionary politics. To this end, his production turned increasingly to graphic work, and, over the course of the subsequent decade, he contributed woodcuts and ink drawings to a number of left-wing publications—foremost among them, *De Tribune,* the official journal of the CPH.

With the reopening of international borders, Alma traveled to Moscow in 1921, where he made the personal acquaintance of a number of prominent Soviet artists (including Wassily Kandinsky, Kazimir Malevich, Vladimir Tatlin, and El Lissiztky), and later played a key role in bringing the seminal Erste Russische Ausstellung [First Russian Exhibition] to the Stedelijk Museum in Amsterdam, following its premier showing in Berlin.[3] Toward the close of the decade, Alma became closely involved with the Cologne-based Progressive Artists' Group, several of whose members had developed a constructivist-derived idiom similar to that in which Alma had been working since the mid-1920s. During this period, Alma frequently contributed graphic works to the Progressives' affiliated publications, which included the group's official journal, *a bis z,* published in Cologne between 1929 and 1933.[4] Through his connection to this group, Alma was invited in 1929 to join fellow Progressive members Gerd Arntz and Augustin Tschinkel at the GWM in Vienna, where he learned the principles of the Vienna Method and designed pictograms for the museum's displays and publications.[5] In 1932 Alma returned to the Soviet Union—this time as part of a consultancy made up of members of the GWM design team who had been invited to the newly created Izostat Institute to train Soviet designers in the principles of the Vienna Method.[6] With the Institute's termination of the Vienna team's contract in 1934, Alma returned to Amsterdam, where he set up his own independent pictorial statistics design firm, Beeldstatistiek Peter Alma. For the remainder of the decade, he produced charts and publications for local government agencies and Dutch commercial organizations (see Figure 2).[7]

With his return to Amsterdam, Alma also resumed his work as a painter (which he had largely discontinued during his time in Vienna and the Soviet Union), again producing easel paintings—as well as several murals—and reintroducing many of the

gouaches, houtsneden van Peter Alma [A Retrospective Exhibition of Paintings, Gouaches, and Woodcuts by Peter Alma] (Amsterdam: Stedelijk Museum, 1966). For group exhibitions, see Carel Blotkamp and Ype Koopmans, eds., *Magie en zakelijkheid: realistische schilderkunst in Nederland 1925–1945* [Magic and Realism: Realistic Painting in the Netherlands 1925–1945] (Zwolle: Waanders, 1999); and Betsy Dokter et al., *Een Kunstolympiade in Amsterdam: Reconstructie van de tentoonstelling D.O.O.D. 1936* [An Art Olympiad in Amsterdam: Reconstruction of the Exhibition D.O.O.D. 1936] (Zwolle: Waanders, 1996). For surveys, see Geurt Imanse et al., *Van Gogh bis Cobra: Holländische Malerei, 1880–1950* [Van Gogh to Cobra: Dutch Painting, 1880–1950] (Stuttgart: Verlag Gerd Hatje, 1980); and Aleida Loosjes-Terpstra, *Moderne kunst in Nederland, 1900–1914* [Modern Art in the Netherlands, 1900–1914] (Utrecht: Haentjens, Dekker & Gumbert, 1959).

3 See Steven Mansbach, "The 'First Russian Art Exhibition,' or the Politics and Presentation of Propaganda," in *Künstlerischer Austausch = Artistic Exchange: Akten des XXVIII. Internationalen Kongresses für Kunstgeschichte, Berlin, 15.-20. Juli 1992*, ed. Thomas W. Gaehtgens (Berlin: Akademie Verlag, 1993), 1: 307–17.

4 Other affiliated publications included the group's booklet, *Soziale Grafik* [Social Graphics] (published in Kladno in 1932), as well as the Czech-language journals, *Výtvarné snahy* [Artistic Endeavors], *Naše cesta* [Our Path], and *Slunce* [Sun] (all published in Prague).

5 As Arntz recounted, he first learned of Alma through the Dutch journal *i10,* which had featured Alma's art and writing in 1927. See Gerd Arntz, *De tijd onder het mes: Hout- en linoleumsneden, 1920–1970* [Time Under the Knife: Wood- and Linocuts] (Nijmegen: SUN, 1988), 27. Rudolf Oxenaar has asserted that Alma and Arntz were brought together through Bart van der Leck, who exhibited at the Kunsthalle Düsseldorf in 1927–1928. See Rudolf Oxenaar, "Bart van der Leck tot 1920: Een primitief van de nieuwe tijd" [Bart van der Leck until 1920: A Primitive of the New Age] (PhD diss., Utrecht University, 1976), 87.



Figure 2
Peter Alma, "Beeldstatistiek" [Pictorial Statistics] brochure, ca. 1936. Stedelijk Museum Amsterdam. Reproduced by permission from Sinja L. Alma and Peter L. Alma.

social and political subjects that had characterized his work during the previous decade. Alma carried on his work as a muralist well into the postwar years, receiving a number of commissions in Amsterdam and The Hague. He also returned to printmaking in these later years—although for these works he adopted an expressionistic style, departing significantly from the constructivist-inspired idiom and the explicitly political themes with which he had worked in the interwar period. Two solo exhibitions in the 1960s (including a retrospective show at the Stedelijk Museum Amsterdam in 1966) brought renewed interest in Alma's work, but attention began to wane following his death in 1969. A small exhibition held in 1976 at the Amsterdam Gallery de Tor marks the last show devoted solely to Alma's work. In the course of preparing this exhibition, the show's organizers discovered that most of the pictorial statistics charts that Alma had designed for the Amsterdam municipality had been destroyed after the war.

6 The Moscow-based Izostat Institute, to which Neurath and his team (Arntz and Alma among them) had been invited as consultants, was created in 1931 as the result of a decree from Stalin, who recognized in the Vienna Method a potential tool to promote the Soviet Union's economic policies for both domestic and international audiences. In support of these aims, the Izostat Institute published a number of books recounting the achievements of the First Five-Year Plan, projecting the anticipated successes of the Second Five-Year Plan, and documenting the expansion of the Soviet aerial fleet. The Vienna Method soon fell out of favor with Soviet authorities, however, because its formal character appeared to be too closely linked to the modernist aesthetics of the international avant-garde, which had long since been supplanted within the Soviet Union by an officially sanctioned "socialist-realist" aesthetic program.

7 For a comprehensive list of Alma's pictorial statistics works in the Netherlands, complete with 68 loose, removable reproductions, see Wim Jansen, *Beeldstatistiek Peter Alma* (Amsterdam: Uitgeverij de Buitenkant, 2014). With the exception of a series of illustrations in a 1946 booklet marking the 50-year jubilee of the Amsterdam Water-company and a 1947 article on pictorial statistics in the journal *Forum,* Alma's work in pictorial statistics ended with the onset of World War II. The 1947 Forum article had likely been written around 1936–1937, but it had to wait until after the end of World War II for its publication. See Peter Alma, "Publieke voorlichting door beeldstatistiek," [Public Information through Pictorial Statistics] *Forum* 2, pt. 4 (1947): 130–33; and Jan Roelfs and Peter Alma, *De trouwe kraan* [The Faithful Faucet] (Amsterdam: Bedrijf der Gemeente Waterleidingen, 1946).

The Development and Dissemination of the Vienna Method

By the time Peter Alma opened his "Office for Pictorial Statistics" in Amsterdam in 1934, the Netherlands had emerged as the principal European center for the production of pictorial statistics.[8] However, the origins of pictorial statistics can be traced to Vienna, where the design approach was first developed to address a specific set of challenges unique to that city's postwar context. The principal figure behind the conception of this new method of information design was Otto Neurath (1882–1945), who since 1925 had served as director of the GWM. Funded by Vienna's Social Democratic government, the GWM sought to educate a mostly working-class audience about relevant social issues, ranging from rates of unemployment and insurance coverage to the city's programs to address housing shortages. Visual media played a central role in these efforts, and the Vienna Method of Pictorial Statistics—later known as Isotype[9]—soon became the principal strategy used in the museum's displays and publications.

The Vienna Method's most distinguishing feature was its use of simplified and repeatable pictograms of the same size to express quantities. This approach, Neurath claimed, marked an improvement over the long-established convention that used pictures of different sizes to represent quantities, since identical pictograms arranged in rows and columns more easily allowed for quantification and comparison. The decision to use countable pictograms rather than bar graphs or pie charts related to the museum's goal of inclusiveness: while the latter assumed a certain level of education, mathematical literacy, and familiarity with scientific representations, pictorial statistics were intended to be accessible to those not initiated in these more specialized types of reading.

Gerd Arntz (1900–1988), the German printmaker who had been invited to Vienna in September 1928 to assist in designing pictograms for the GWM's displays and publications, was instrumental in establishing the Vienna Method's characteristic appearance. His utilization of linocut had marked a vast improvement over the earlier techniques for pictogram production (which had ranged from illustrative line drawings to cut-paper silhouettes). In January 1929, Arntz was promoted to head the museum's graphics department, just as the museum was beginning work on its major publication, the "atlas" *Gesellschaft und Wirtschaft* [Society and Economy]. The production of *Gesellschaft und Wirtschaft* fueled the demand for new pictogram designs, and the museum hired a number of additional designers—Peter Alma, among them—to assist in the task.[10]

8 In addition to Peter Alma, the circle of Dutch designers working in the Vienna Method included Willem Sandberg and Fré Cohen (1903–1943). Cohen was an employee of the Amsterdam Municipal Printing Office, whose initial work used pictorial statistics from the Amsterdam branch of the Mundaneum Wien, but she ultimately developed her own pictorial statistics. Her clients included the Municipality of Amsterdam, Schiphol airport, the Confectioners Union, and the co-operative insurance company, OBAS. The graphic designer and interior architect Nico de Koo (1881–1960), who produced pictorial statistics for VAEVO and the municipality of Rotterdam, also can be mentioned in connection with these designers, although his approach cannot be said to conform to certain key principles of the Vienna Method.

9 The term Isotype, an acronym for International System of Typographic Picture Education, was first introduced in 1935, after Otto Neurath and several members of the GWM design team had relocated to The Hague.

10 In addition to the aforementioned members of the GWM design team—Reidemeister, Arntz, Alma, and Tschinkel—other people who worked for varying periods with Neurath at the museum included Erwin Bernath, Josef Frank, Willem Sandberg, Rudolf Modley, Lotte Beese, Walter Heinz Allner, and Marie Jahoda. Some members of this international group eventually returned to their countries of origin, while others were driven into foreign exile by the Austro-fascists.

Gesellschaft und Wirtschaft's completion in 1930 coincided with a major campaign to internationalize the operations of the GWM. This goal was motivated, in part, by the growing realization that—given Vienna's increasing political isolation within Austria—the future development of the museum's work would likely depend on a network of international support. To this end, the museum created a separate organization in 1932 that would oversee the wider distribution of its displays. Named the Vienna Mundaneum, this organization produced materials for international exhibition and partnered with a number of organizations, including the Economisch-Historische Bibliotheek [Economic-Historical Library] in Amsterdam. Even before the Mundaneum's partnership with the Economic-Historical Library, the Vienna Method had reached Amsterdam through the work of W.J.H.B. Sandberg (1897–1984), who had visited Neurath in Vienna for four months in 1927 and studied his approach to pictorial statistics design. Upon his return to Amsterdam, Sandberg created an office for "Beeldstatistiek." During the ensuing years, this office produced statistical charts for a number of local exhibitions, beginning with Stedelijk Museum's 1928 exhibition, "Arbeid en arbeidsmethoden voor onvolwaardige arbeidskrachten" [Labor and labor methods for the disabled] and continuing into the subsequent decade with pictorial statistics for the Dutch Postal Office in 1933, as well as displays for the Department of Social Affairs at the Jaarbeurs in 1933 and 1934.

Beyond the public exhibition of pictorial statistics charts, the Vienna Method also made its way to the Netherlands through print media. Between 1929 and 1932 Sandberg, Neurath, and Alma all published Dutch-language texts, advocating the new approach to information design.[11] The establishment of Dutch links proved to be invaluable for the survival of Neurath's project because after the Austro-fascists closed the GWM in 1934, the Netherlands provided a new base of operations.[12] Taking refuge at their branch offices in The Hague, Neurath, Reidemeister, Arntz, and other core members of the museum team reconstituted as the International Foundation for Visual Education. They rebranded the Vienna Method with the more international-sounding, English-language acronym, Isotype, by which the method is most commonly known today.[13] Alma, meanwhile, had returned to the Netherlands as well, establishing his own office for pictorial statistics in Amsterdam, independent from Neurath's foundation.

Alma's first pictorial statistics charts for Dutch-language audiences date from 1932, when the University of Amsterdam held the exhibition, Mother and Child, on the occasion of its 300-year

11 Sandberg's 1929 pamphlet, *Het verleden in Egyptische reliefs. Het heden in statistisch beeld* [The Past in Egyptian Reliefs, the Present in Statistical Pictures], appears to be the earliest Dutch-language articulation of the principles of the Vienna Method. This pamphlet was followed in 1930 by a special issue of the art and design journal, *Wendingen,* that was devoted to "pictorial statistics and sociological graphics" and that featured an essay by Peter Alma. Alma expanded on this introductory text in a later article, "Beeldstatistiek," featured in the September 1932 issue of the architectural journal, *De 8 en Opbouw.* Here, Alma drew upon Neurath's notion of a "portable museum," discussing pictorial statistics in terms of the social-democratic tradition of exhibition-based social education. This same issue also featured an article by Neurath, describing for Dutch audiences the use of pictorial statistics at the GWM. See Otto Neurath, "Beeldstatistieken van het Gesellschafts- und Wirtschaftsmuseum te Weenen" [Pictorial Statistics from the Social and Economic Museum in Vienna], *De 8 en Opbouw* 3, no. 19 (1932): 191–94.

12 The Dutch branch of the Mundaneum, which had been founded in the previous year, had its provisional address at the International Industrial Relations Institute at Badhuisweg 232 in The Hague; in August 1934, the Mundaneum Institute relocated to Obrechtstraat 267. See Andreas Faludi, "Otto Neurath and Planning Theory," in *Encyclopedia and Utopia: The Life and Work of Otto Neurath, 1882–1945,* ed. Elisabeth Nemeth and Friedrich Stadler (Dordrecht: Kluwer Academic Publishers, 1996), 211.

13 See endnote 9. The collaboration at the International Foundation for Visual Education lasted until the outbreak of World War II, at which point Neurath and Reidemeister fled to England, continuing their work in Oxford and London. Arntz remained in The Hague and, following the war, worked for the Nederlandse Stichting voor Statistiek [Dutch Foundation for Statistics] (NSS) until his retirement in 1965. For more on this period, see Ferdinand Mertens, *An Idealist in The Hague: Otto Neurath's Years in Exile* (The Hague: Municipality of The Hague, 2007).



Figure 3
Peter Alma, Cover design for *Wendingen* 11, no. 9 (1930). Private Collection. Reproduced by permission from Sinja L. Alma and Peter L. Alma.

jubilee. The Statistical Office of Amsterdam, represented by T. van den Brink, advised the exhibition committee on the composition of about 100 graphics, for which Alma and Sandberg served as artistic contributors.[14] Alma designed 12 pictorial statistics charts for the exhibition's "handicapped child" section, showing developments in the education of the intellectually disabled, the deaf, and the blind.[15] In 1933, the Statistical Office contributed a number of charts to the international traffic exhibition in Brussels that charted the rates of traffic accidents in Amsterdam, and the following year it celebrated its fortieth anniversary with a small exposition of all its publications and graphics. Responding to the public's show of interest in this exhibition, the Statistical Office decided to make its research results accessible to the larger public and set up a committee, "Friends of Statistics," to finance the project.[16] The public library at the Keizersgracht in Amsterdam provided a space for this purpose. Beginning in November 1935, a rotating exhibition of Alma's charts went on display, treating a number of themes related to Amsterdam's economic and cultural development.[17]

For Alma, 1937 was a particularly productive year: He produced 7 charts on the harbor of Amsterdam for the Statistical Office's third exhibition at the public library and an additional 13 charts on various services of the municipality of Amsterdam (e.g., electricity, gas, telephone, and health care) for the exhibition, Amsterdam 1898–1938, held on the occasion of Queen Wilhelmina's

14 See the catalog to the exhibition, *Moeder en Kind,* held from June 17 to July 10, 1932, at the R.A.I. exhibition hall in Amsterdam.

15 The only record of this work is a single photograph of the chart dealing with "Education for the Deaf," reproduced in *De 8 en Opbouw* 3, no. 19 (September 15, 1932): 190.

16 *Amstelodamum. Maandblad voor de kennis van Amsterdam* [Amstelodamum: Monthly for Knowledge of Amsterdam] 23 (1936): 3.

17 Of the seven statistical charts displayed at this first exhibition, two original panels have been preserved (and are currently in the archive of the Amsterdam Museum), while the other five have been recorded in photographs (now in the collection of the Stedelijk Museum Amsterdam). These charts were replaced the following year by a new series on traffic and traffic accidents. Only one original remains from this series (also in the Amsterdam Museum's archive), although photographs of the others have been preserved.

18 Of the seven Amsterdam harbor charts, five are known: Three have been preserved as originals in the Amsterdam Museum's archives, and two survive as photographs.

19 *Bureau van Statistiek der Gemeente Amsterdam 1894–1944* [Office of Statistics for the Municipality of Amsterdam 1894–1944] (1944), 40. The titles can be found in the catalog of the exhibition, Amsterdam 1898–1938, although they do not correspond entirely with the titles that appear on the charts. Three have been preserved as originals in the Amsterdam Museum's archives; eight are known from photographs.

20 Of these 33 charts, ten originals have been located: two in the Amsterdam City Archives and eight in the Amsterdam Museum's archives. The latter were found accidentally by Carry van Lakerveld in the lumber-room of the Statistical Bureau of Amsterdam. See the *Financieele Dagblad,* October 1, 1976.

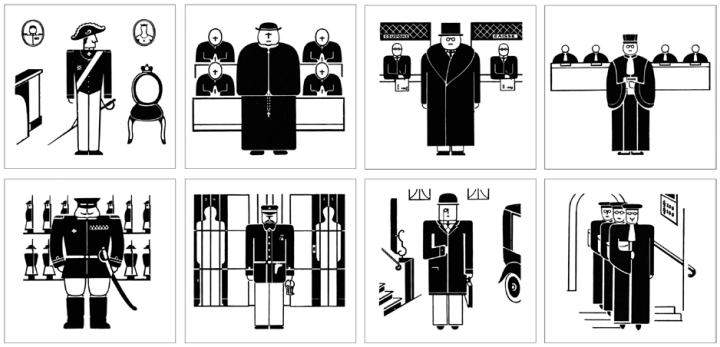


Figure 4
Peter Alma, *Eight Portraits* series, 1929, woodcuts. (Reproduced in the booklet *Kapitalistische Orde* [Capitalist Order]. Private Collection.) Clockwise from top left: Minister, Priest, Banker, Judge, Lawyer, Diplomat, Jailer, and General. Reproduced by permission from Sinja L. Alma and Peter L. Alma.

40-year jubilee.[18] After the show, these charts were offered to the public library for permanent exhibition.[19] In total, the Amsterdam Statistical Office ordered at least 33 charts from Alma.[20] In addition to these commissions, Alma also produced charts for the Amsterdam abattoir,[21] the Rotterdam harbor, the Dutch Civil Servants Union, Schiphol airport, Fokker aviation factory, KLM airlines, and the AVRO broadcast association, as well as for the publications, *Beter Wonen* [Better Living] and *De trouwe kraan* [The Faithful Faucet].[22]

"Beeldstatistiek en Sociologische Grafiek"

While Alma considered his practice as a designer to be distinct from his production as a painter and graphic artist, the different areas were at times closely aligned. One of the clearest articulations of the dialogue between these practices appears in an issue of the arts journal *Wendingen* [Revolutions] devoted to the theme of "pictorial statistics and sociological graphics," for which Alma produced the cover design, the introductory essay, and nearly half of the reproduced artworks (see Figure 3).[23] This publication reflects the extent to which Alma's artistic vision and objectives as a designer coincided with the project of the GWM in Vienna. The issue's title corresponds to the two-part structure of Alma's text, with the first part of his essay (illustrated with reproductions from *Gesellschaft und Wirtschaft*) presenting the background and basics of the Vienna Method, and the second part devoted to prints and drawings that share with pictorial statistics charts a "sociological" approach. A selection of artworks by Alma, Arntz, Tschinkel, and other members of the Progressives, grouped together under the label "sociological graphics," illustrates this section.[24] Seen together, they reveal a number of consistent features, including the typological treatment of subject matter and the geometric abstraction of figures. Such tendencies are especially pronounced in Alma's featured woodcuts, which include two prints from his *Geld* [Money] series (1929), and his entire *Acht portretten* [Eight Portraits] series of the same year (see Figure 4). Alma's discussion of these prints and drawings is especially illuminating, given the parallels

The majority of Alma's pictorial statistics charts were destroyed after the war by the municipal services. This destruction first came to light in 1966 when the Amsterdam Stedelijk Museum organized an exhibition on the occasion of Alma's eightieth birthday. Fortunately, most of Alma's pictorial statistics charts were photographed by Cas Oorthuys, whose prominence and renown as a photographer ensured the preservation of these images—a large proportion of which is housed in the Stedelijk Museum's collection.

21 Although the exact number of charts produced for the abattoir is unknown, six originals are housed in the Amsterdam Stedelijk Museum's depot.

22 See L. van der Wal et al., *Beter wonen* (Amsterdam: N.V. De Arbeiderspers, 1938); and Jan Roelfs and Peter Alma, *De trouwe kraan* (Amsterdam: Bedrijf der Gemeente Waterleidingen, 1946).

23 Peter Alma, "Beeldstatistiek en sociologische grafiek," *Wendingen* 11, no. 9 (1930): 3–7.

24 The label "sociological graphics" appears to have originated with Otto Neurath, who coined the term in reference to the prints and drawings he had acquired for the museum's collection for the purposes of "visual education"—a large number of which had been produced by Alma and other members of the Progressives circle. The term first appeared in a 1930 article that Neurath had written for Die Form, the journal of the *Deutscher Werkbund.* See "Das Sachbild. 1: Bildhafte Pädagogik" [The Factual Picture, Part 1: Visual Education] *Die Form* 5, no. 2 (1930): 29–36. For more on "sociological graphics" at the GWM, see Benjamin Benus, "Figurative Constructivism and Sociological Graphics," in *Isotype: Design and Contexts, 1925–1971,* ed. Christopher Burke, Eric Kindel, and Sue Walker (London: Hyphen Press, 2013), 216–48.

he draws with pictorial statistics: In addition to their shared set of themes—"movements of the masses," relations of "wealth-poverty, labor-capital, rural and urban life," and "the conflicts arising from the contradiction of class interests"[25]—Alma notes their common "sociological perspective," characterized, above all, by an attitude of "objectivity" *[zakelijkheid].*

Alma was careful here to distinguish his notion of objectivity (which, like pictorial statistics, aimed to document "essential" trends "through the simplification and elimination of that which is extraneous and contingent") from the "naturalistic imitation of nature" associated with the *Neue Sachlichkeit* in painting.[26] Rather than trying to picture social conditions through optical impressions of surface appearance, Alma sought to produce an objective picture of these conditions by representing the relationships that structure them. In this respect, Alma's ideas about representation run parallel to a position that had emerged within a number of philosophical and scientific circles of the interwar period, including the Vienna Circle, of which Neurath was a founding member.[27] This position, for which Lorraine Daston and Peter Galison have coined the term "structural objectivity,"[28] held that scientific representations could only communicate objectively when they favored structural relationships over subjective perceptions (e.g., in the way that subway maps may distort the contours of natural geographic features to show the relative positions of stations). Representations seeking to produce an objective picture by means of visual resemblance (i.e., through photographs or naturalistic illustrations) would inevitably fall short of this goal. Alma's discussion of pictorial statistics and sociological graphics rests on a similar premise, and certain members of the Vienna Circle interpreted the graphic works produced by Alma and his artistic circle in these very terms. For example, mathematician Karl Menger described the work of Alma and his colleagues as "the artistic counterpart to the tendency to abstraction in mathematics." Elaborating on this analogy, Menger later recalled how "the graphic artists of the 1920s selected only a few absolutely essential features of types of objects and people and represented, as it were, the Platonic ideas of the objects by these abstractions."[29]

The dialogue between pictorial statistics and sociological graphics, first articulated by Alma in *Wendingen,* persisted in Alma's work throughout the 1930s. The typological treatment of subjects and the schematic approach to figuration that connect these two areas of production became more pronounced in Alma's two later additions to the initial eight "portraits" that appeared in the journal (the *Rentier and Bishop*), which together were published in booklet form under the title *Kapitalistische orde* [Capitalist Order].

25 "Het bewegen der massa, rijkdom-armoede, kapitaal-arbeid, het leven op het land – in de steden, de conflicten, die uit de belangentegenstellingen der klassen ontstaan, zijn de hoofdbronnen, waaruit de sociologische grafiker zijn gegevens put." Alma, "Beeldstatistiek en sociologische grafiek," 3–7.

26 "'Zakelijk' moet zijn uitbeelding zijn, niet op de wijze, zoo als de schilders der 'nieuwe zakelijkheid' dit bedoelen, namelijk een naturalistische nabootsing der natuur, maar zakelijk door vereenvoudiging, weglaten van bijkomstigheden en toevalligheden, om het essentieele duidelijk tot zijn recht te doen komen." Ibid.

27 This group of philosophers, scientists, and mathematicians (whose core members also included Hans Hahn, Philipp Frank, Moritz Schlick, Rudolf Carnap, and Karl Menger) promoted through lectures and publications a "scientific world-conception" [wissenschaftliche Weltauffassung] that tried to ground philosophical discourse in logically or empirically verifiable statements. See Friedrich Stadler, *The Vienna Circle: Studies in the Origins, Development, and Influence of Logical Empiricism* (Vienna: Springer, 2001). A number of studies have suggested parallels between the Vienna Circle's logical empiricist philosophy and Neurath's Vienna Method. For a discussion of "cross-connections" between Neurath's philosophical activities and his work in visual education, see Christopher Burke, "The Gesellschafts- und Wirtschaftsmuseum in Wien, 1925–34," in *Isotype: Design and Contexts, 1925–1971,* ed. Christopher Burke, Eric Kindel, and Sue Walker (London: Hyphen Press, 2013), 87–91.

28 Lorraine Daston and Peter Galison, *Objectivity* (New York: Zone Books, 2007), 253–307.



Figure 5
Photograph of Peter Alma's 1936 poster (destroyed), *War Makes the Man*. Private Collection. Reproduced by permission from Sinja L. Alma and Peter L. Alma.

This approach remains a feature in such later paintings as *Pakhuis* (1936), *Brand* (1936), *Twee mannen (1937),* and *Boerenfamilie* (1937), as well as in Alma's 1936 anti-war poster, *De oorlog maakt de man* [War Makes the Man] (see Figure 5). Here, the pictographic silhouette of a wounded soldier, surrounded by rows of smaller soldier-pictograms, suggests through its repetition the immense numbers of war casualties. The soldier's schematic representation (which Alma reused the following year in his painting *Oorlog*) is in fact very close to the pictograms Alma designed to indicate traffic accident victims, which appeared in a chart from around the same time.

The reciprocal relationship between Alma's paintings and design work can also be detected in his murals of the 1930s—among them, his five-part painting for the first-floor hall of the 2e Openbare Handelsschool [2nd public trade school] in Amsterdam

29 Karl Menger, *Reminiscences of the Vienna Circle and the Mathematical Colloquium* (Dordrecht: Kluwer, 1994), 71. Before returning to the University of Vienna in 1927 as a professor of mathematics, Menger spent two years in Amsterdam, where he made the acquaintance of Peter Alma. Arntz, in a typed manuscript in the Neurath Isotype Collection at the University of Reading (dated July 3, 1972), explains that this association might also have facilitated Alma's invitation to Vienna.



Figure 6
Detail of Alma's murals for the first floor of the 2e Openbare Handelsschool, Amsterdam, 1930–1932. Reproduced by permission from Sinja L. Alma and Peter L. Alma.



Figure 7
Peter Alma, *Transport,* 1924, oil on canvas. Gemeentemuseum, The Hague. Reproduced by permission from Sinja L. Alma and Peter L. Alma.



Figure 8
Detail of Alma's murals in Amstel station, Amsterdam, 1939. Reproduced by permission from Sinja L. Alma and Peter L. Alma.

(now the Berlagelyceum) (see Figure 6). Alma created the mural from 1930 to 1932, taking as its theme the school's various areas of study: trade, transport, and technology.[30] In addition to drawing on earlier sources for this work, such as his 1924 painting *Transport* (see Figure 7), Alma also incorporated elements—in the form of the parcels and barrel—derived from his design work at the GWM. The mural, in turn, anticipated features that appeared in some of the pictorial statistics charts that he produced later in the decade. This crossover is also evident in Alma's Amstel station murals (see Figure 8), created while he was still producing pictorial statistics for the Amsterdam statistical office and the AVRO. Certain features in these paintings, such as the evolution of train engine designs and the map of the world illustrating railroad track coverage, were adapted directly from the chart on the development of the railroad in *Gesellschaft und Wirtschaft* (see Figure 9).[31] Other details, such as the rendering of cityscapes along the painting's lower edge, seem to borrow devices that first appeared in pictorial statistics charts as "Führungsbilder" [guide images] (i.e., illustrations that, alongside the charts' printed titles, often served to introduce the charts' themes).

30 See Ger van Berlo, Herman Engering, and Gerard Hunderman, *Een Amsterdamse school* (Amsterdam: Stichting M. Spaander-Fonds, 1999).

31 For a discussion of the mural's connection to the *Gesellschaft und Wirtschaft* publication, see Benjamin Benus, "Figurative Constructivism, Pictorial Statistics, and the Group of Progressive Artists" (PhD diss. University of Maryland, 2010), 176; 310.

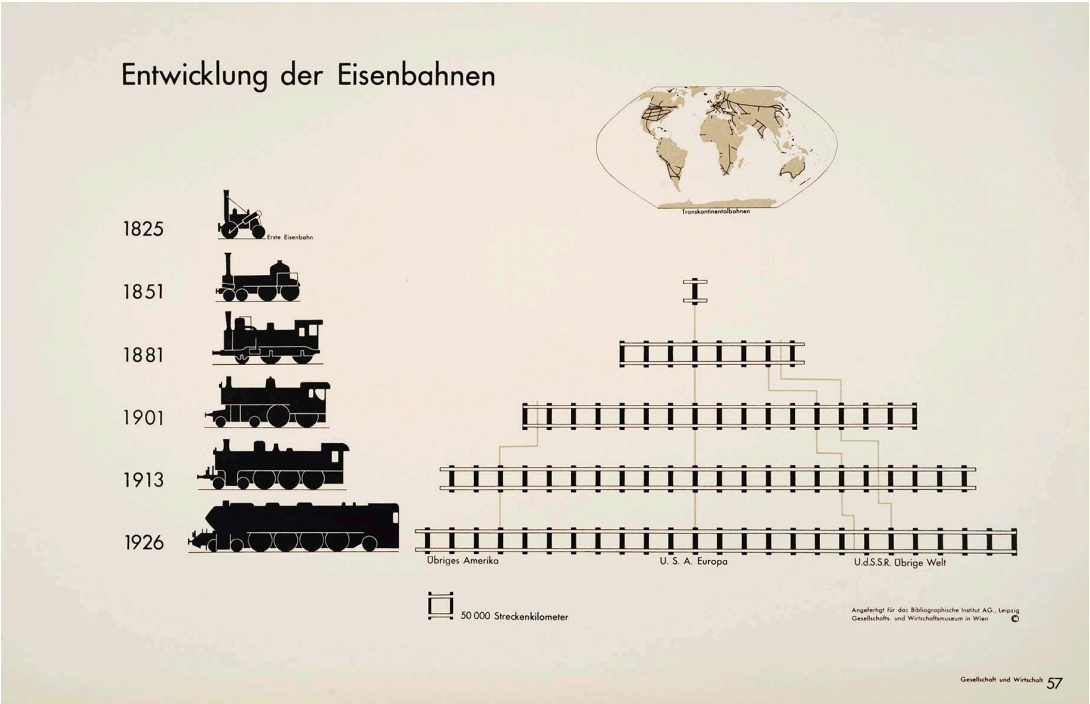


Figure 9
Plate 57 from *Gesellschaft und Wirtschaft: Bildstatistisches Elementarwerk* (Leipzig, 1930), illustrating the development of the railroad. Otto and Marie Neurath Isotype Collection, University of Reading.

Peter Alma's Contribution to Pictorial Statistics Design

Alma's ideas regarding the potential functions and applications of the Vienna Method were formed by his initial experience producing pictograms for *Gesellschaft und Wirtschaft*—a publication that was designed to illustrate for general audiences the state and development of various regional and global social phenomena and, through its large-format loose-leaf pages, could function as a "portable museum." Alma's pictorial statistics charts—produced in a large format (90 x 60 cm) and shown in the hall of the public library in Amsterdam—were designed with a similar intention: to provide to the public at large information related to the city's historical development. (Topics included electricity use, telephone use, household water expenditure, and the number of tram and bus passengers.) Alma also emulated the example of the GWM in the complexity of the statistical presentations, which frequently communicated information on more than two variables within the same chart. This approach can be seen in Alma's chart on milk inspection (see Figure 10). In accordance with the conventions of the Vienna Method, the vertical axis at the left side of the chart represents points in time, while the horizontal axis (in this case, comprising two separate registers indicating raw/unpackaged milk and pasteurized/bottled milk) corresponds to quantities. The two quantitative categories are further subdivided according to the outcome variable (approved or rejected). With three variables (time,

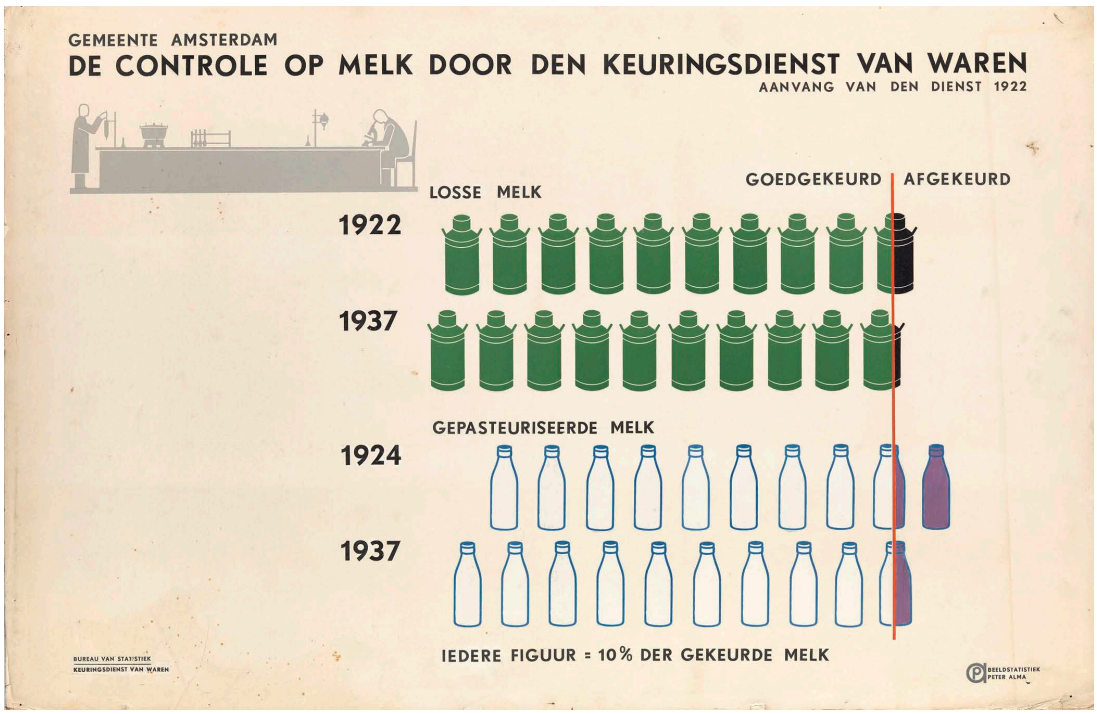


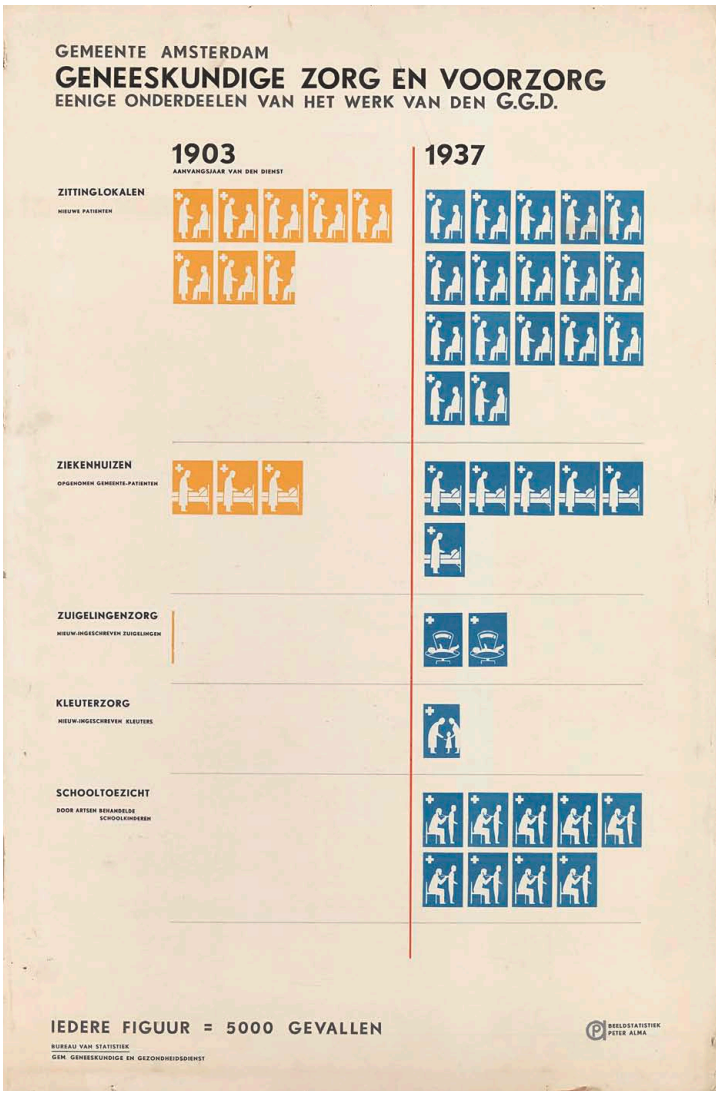
Figure 10
Peter Alma, "Inspection of Milk by the Commodities Authority," 1938. 601 x 911 mm. Amsterdam Museum. Reproduced by permission from Sinja L. Alma and Peter L. Alma.

package, and outcome), Alma's chart produces what, in statistical terms, may be described as a visual three-dimensional table. In tracing the declining rate of milk rejection during the previous decade, this chart and others like it functioned to reassure local audiences that municipal institutions were working in the interest of the public. (In this particular case, viewers would have been able to observe that the food inspection department had, in the 15 years since its establishment, improved the conditions of milk production and storage.) By making such information easily accessible to general audiences, Alma's pictorial statistics charts served Amsterdam's population in much the same way that the GWM's exhibitions had sought to serve the population of Vienna just a few years earlier.

Alma's approach to pictorial statistics design was also informed by the critical practice of "transformation"—an essential component of the Vienna Method as it had been conceived at the GWM. As the step between the gathering of raw data and its presentation in the form of a chart, transformation involved sorting through data, editing and selecting data, and "transforming" it from its numerical form into a visual-spatial arrangement. Because these charts were not produced according to any wholly preconceived formula, but had to be tailor-made to fit each particular subject, the transformation step demanded a high degree of flexibility and inventiveness.[32] For example, in the chart illustrating "Medical

32 Marie Neurath (1898–1986) served as the principal "transformer" at the GWM and its successor organizations. For more on the practice of transformation, see Marie Neurath and Robin Kinross, *The Transformer: Principles of Making Isotype Charts* (London: Hyphen Press, 2009).

Figure 11
Peter Alma, "Medical Cure and Precaution, Some Aspects of the Work of the G.G.D. (Municipal Health Organization)," 1938. 910 x 600 mm. Amsterdam Museum. Reproduced by permission from Sinja L. Alma and Peter L. Alma.



Cure and Precaution" (see Figure 11), Alma reversed the convention that he had employed in the milk inspection chart: Rather than aligning the years on the y-axis, Alma arranged the two dates on the horizontal axis, so that the quantifiable categories stacked up under each year as vertical columns.[33] As Table 1 demonstrates, the configuration that Alma used for the "Medical Cure" chart (featured on the left of the table) is more effective in facilitating the comparison of the four variables across the two time points than the more frequently used arrangement (seen on the right).

The chart produced in 1938 illustrating Amsterdam's population increase and geographic expansion (see Figure 12) reveals Alma as a designer (and transformer) of particular originality and creativity. As with all of the most engaging examples of pictorial statistics, this chart provides for a number of readings: Beyond showing the growth of the city's population in the years between

33 Precedents for such formulations can be found in the work produced by the GWM during the period of Alma's employment there. See, for example, the 1931 chart, "Mensch und Produktion," comparing the average production figures for a number of goods in 1870–1879 with that of the decade after World War I (Number T802 in the files of the Otto and Marie Neurath Isotype Collection, reproduced in Robin Kinross's essay, "The Graphic Formation of Isotype, 1925–40," in *Isotype: Design and Contexts, 1925–1971*, 131).

Table 1 | A comparison between possible schemes for presenting the data used in the chart "Medical Cure and Precaution."

	1903	1937
A	aaa	aaaa
B	b	bb
C	cc	ccc
D	ddddd	dddd

1903	A	aaa
	B	b
	C	cc
	D	ddddd
1937	A	aaaa
	B	bb
	C	ccc
	D	dddd

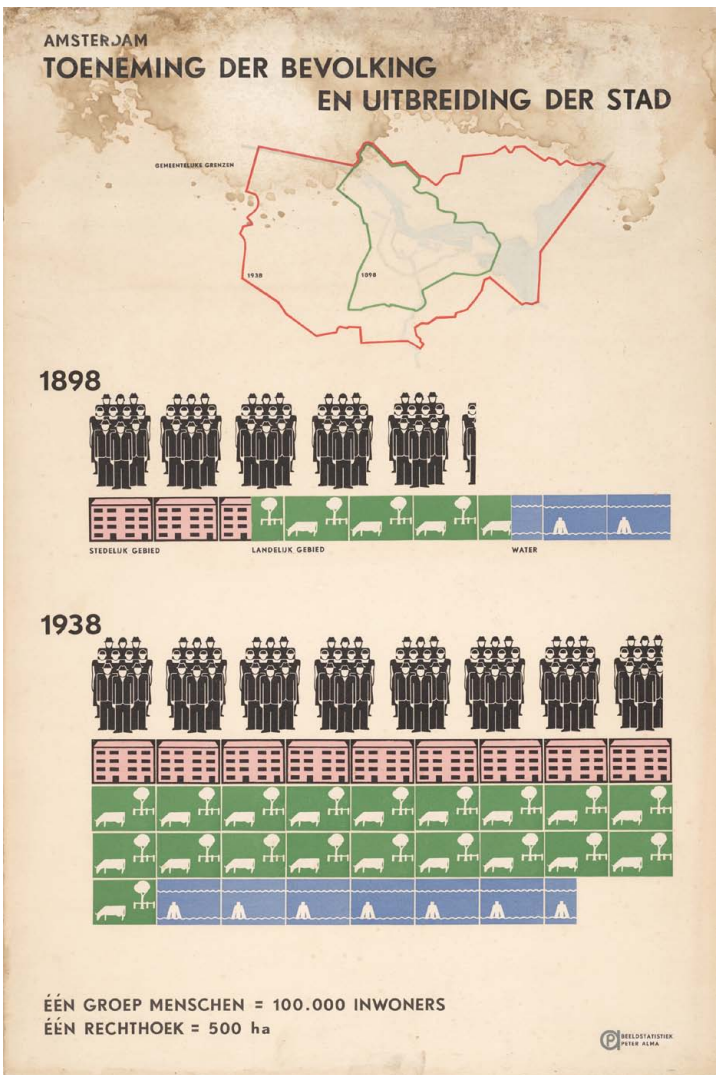


Figure 12
Peter Alma, "Population Growth and Urban Expansion," 1938. 907 x 602 mm. Amsterdam City Archive. Reproduced by permission from Sinja L. Alma and Peter L. Alma.

1898 and 1938, this chart also makes visible the shifting ratios between urban and rural areas, as well as population size relative to both of these areas. Thus, viewers would have been able to observe that the rate of urban and rural expansion had, in fact, outpaced the city's population increases. The possibility of imparting such information by foregrounding relationships (rather than exact numbers or absolute values) had been one of the central aims of the Vienna Method from the very beginning. In this particular chart, Alma also articulated some of these relationships in more than just one mode of visualization: The upper portion of the chart, for example, features a map of the city's changing boundaries, so that area expansion could be visualized in geographic as well as quantitative terms.

In dealing with so many variables—population figures for 1898 and 1938, as well as urban, rural, and aquatic areas for both years—Alma faced a number of choices concerning the data's presentation. One choice involved the division of the total quantities into equal units. (Alma settled on 500 hectares for the geographic units and 100,000 people for the figural groups.) Another choice related to the arrangement of units: Here Alma opted for a configuration in which urban, rural, and aquatic units continued uninterrupted in horizontal rows. Other arrangements are also conceivable: Each unit type could have been given its own row, for example, but the continuous arrangement had the advantage of conveying the totality of Amsterdam's geographic area in a unified form. Finally, Alma had to decide on the number of units per row. His decision to lay the geographic units out in a row of nine appears to have been determined by the preference to use a single row of the grid to designate the total 1898 geographic area of the city.[34]

In arriving at these decisions, Alma had a wealth of examples from which to draw—many of which had been produced at the GWM in Vienna, as well as at the Institut Izostat, during his tenure at these institutions. Among the precedents most pertinent to this particular chart is one that appeared in the GWM's 1932 publication, *Technik und Menschheit* [Technology and Humanity], depicting "[a]gricultural machine power and harvested areas in the U.S.A." Like Alma's chart, this chart allowed for a number of comparisons between expanding land areas and other quantities over time (in this case, agricultural workers and increased machine power). The chart used a similar arrangement, in which quantities were set in horizontal rows (with rectangular units designating hectares) and time was arranged along a vertical axis—although the chart was not designed to describe a continuous geographic area, or to distinguish between different geographic features. For geographic differentiation, Alma could look

34 That the spacing of the figural groups does not correspond to the same nine-unit grid (they are set out in a row of eight) is perhaps counter-intuitive, then. However, this decision appears to have been dictated by a logic analogous to that which determined the arrangement of the geographic units, requiring that the larger population number also fill out an entire row.

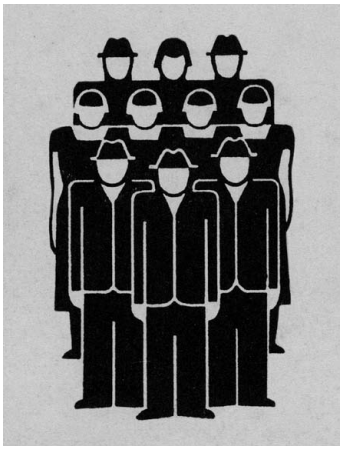


Figure 13
Peter Alma, pictogram for the 1938 chart on population growth. Reproduced by permission from Sinja L. Alma and Peter L. Alma.

at other precedents, such as the chart produced in 1930 for *Gesellschaft und Wirtschaft* that depicted "[p]roductive areas of the earth" and that used a similar strategy to distinguish between woodland, grassland, and farmland. Other relevant charts would have been those produced in *Gesellschaft und Wirtschaft* dealing with geographic expansion and population increase, or those dealing with population density at different times and in various places. That Alma could reference these earlier charts without recycling their formulations attests to his skill as a transformer and his understanding of the Vienna Method, which established a set of general principles but provided no preconceived formulas. Formulations, as Alma understood, were contingent on particular subjects and therefore always had to be imagined anew by the transformer.

In addition to highlighting his inventiveness as a transformer, this chart also reveals Alma's unique and highly developed aesthetic sensibilities—especially in the design of the chart's individual components. His population pictogram, in particular, deserves close examination (see Figure 13). Alma designed a figural cluster to serve as the basic unit, rather than using the individual figure that appeared as the more frequent convention in population charts. This choice is a curious one: We might speculate that the group-pictogram was chosen over the individual figure for the former's suggestion of collectivity and cohesiveness. As with the overall layout of the chart, Alma also had to make a number of choices related to the arrangement of figures within the pictogram. These decisions related both to the configuration of the ten figures that would designate 100,000 inhabitants and to the equal distribution of male and female figures within that configuration. Here, Alma chose to construct the cluster to include three alternating rows: three men appeared in the lowest row, four women in the middle row, and two men and one woman in the upper row. In its variation and tapering forms at both ends, this pictogram avoided the potential monotony in an arrangement of ten near-identical figures.

In lowering the bottom-center male figure below the line of his neighbors to the left and right, Alma also allowed for an openness at the center of the pictogram, thus avoiding what might otherwise have appeared cluttered. Notice, for example, how the white, crenelated pattern that constitutes the necklines of the women's dresses in the center row is touched at two corners by the hats of the outer-most men in the bottom row. If the central male figure had remained on the same level, his hat would have made contact at both corners, generating a clumsy and confusing shape at the center of the pictogram. In repositioning this figure, Alma also generated an economy of form in which a continuous line could at the same time describe both shoulders of the central figure and the inner shoulders of the outer figures.

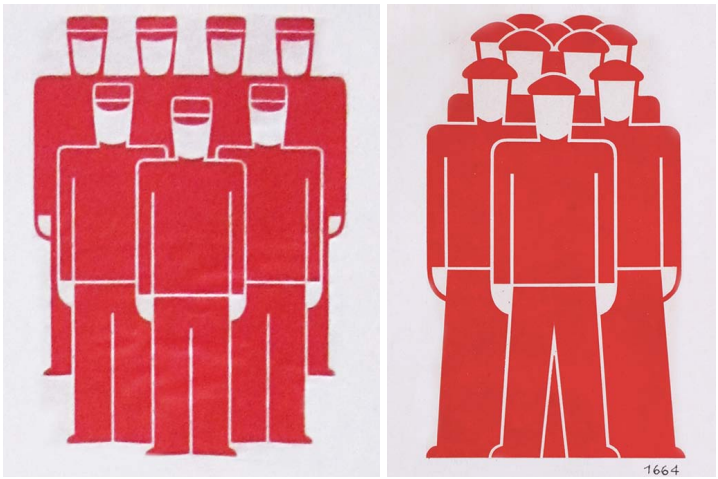


Figure 14
Left: Worker-group pictogram by Peter Alma, 1930s. Private collection. Reproduced by permission from Sinja L. Alma and Peter L. Alma. Right: Worker-group pictogram by Gerd Arntz, 1930s, from the Isotype "picture dictionary." Otto and Marie Neurath Isotype Collection, University of Reading.

Again, precedents for such multi-figure pictograms were available—both within Alma's growing dictionary of symbols and in the extensive catalog that Arntz had produced during the previous decade (see Figure 14). However, the pictogram that Alma designed for the Amsterdam population chart reimagines these conventions according to a different sensibility. The comparison between these multi-figure pictograms is instructive: Beyond alerting viewers to the vast number of choices involved in pictogram design, such comparisons also reveal the extent to which designers' distinct handwriting and personalities emerge, even in the most schematic and constrained formulations.

Alma can be further distinguished from his counterparts in his dual role as draftsman *and* transformer. This combination stood in marked contrast to the operation at the GWM (and its successor organizations), where a well-established division of labor existed, in which draftsmen took charge of the design only after the transformer (usually accompanied by experts in relevant fields) had arrived at finished sketches. In Alma's case, the Amsterdam Statistical Office merely provided him with raw data; he independently carried out all subsequent steps in the design process.

Beyond distinguishing Alma as a unique figure in the field of information design, the examination of Alma's pictorial statistics production—and the reconstruction of its full scope and extent—provides a more complete picture of social education in interwar Amsterdam than that which has until now been available. Above all, the recovery of this material brings to light the role that Alma and the city's municipal government envisioned for visual media generally, and for the Vienna Method in particular, in their efforts to foster an informed and democratically engaged public.