

Angélique Groß, *Die Bildpädagogik Otto Neuraths: Methodische Prinzipien der Darstellung von Wissen*. ISBN 978-3-319-16316-1. xii + 288 pp. Springer, 2015. 89,99€ (hardcover).

A. Groß's *Otto Neurath's Pictorial Education: Methodological principles of representing knowledge* offers a detailed study of the method of pictorial statistics ("ISOTYPE") developed by Neurath's team in the Viennese Museum of Society and Economy. This contribution to the Vienna Circle studies enriches the current state of literature with the perspective of an education scientist. The author situates Neurath's philosophy of education in the tradition of Late Enlightenment, which was also the intellectual background of Vienna Circle. Considering his involvement in the adult education movement and his role as a leading spokesperson for logical empiricism, Neurath's program of visual education appears truly as a project for "enlightening" the public by making scientific knowledge accessible. In his social vision built around a humanistic and socialized formulation of happiness, education plays a key role as a much-needed intellectual tool for changing society. Isotype's intended audience – the semi-literate working class of Vienna in the 1920s – determines its design principles and sets it apart from other pedagogical attempts of its time. The book includes a very informative selection of some of the most relevant Isotype material, reproduced in a good visual quality, and ends with a chronological list of the works and life events of Otto Neurath. The abundance of very representative and well-commented visuals, combined with a biographical annex, makes the book a valuable reference.

After the introductory first chapter, the second chapter gives an overview of logical empiricism as the background of Neurath's concern with visual education and describes his concept of Enlightenment as instrument of the scientific world-conception. In the light of the Vienna Circle manifesto, Neurath's idea of Enlightenment is presented here as a link between scientific knowledge and the collective shaping of society. The book stresses the "multidimensional consistence between science and society inside the scientific world-conception" (p. 17), in the light of which visual statistics appears as a representative product of the Late Enlightenment. Moreover, Neurath's specific method of visual education "derives almost logically from the context of the scientific world-conception" (*ibid.*). This aspect, developed in this chapter ("Why Visual Education? The scientific world-conception"), makes the book especially interesting for historians of philosophy of science, as a successful application of logical empiricism in a practical field. As an inclusive medium of communication, visual education serves the interests of cooperation – an objective best understood through the lens of the logical empiricist idea of the unity of science, which requires a corresponding unity in language. Moreover, the idea of using purified pictures instead of culturally loaded words reflects an empiricist concern for the transcultural. Groß situates the logical empiricist pedagogy within the Austrian mass education movement led by Ludo Hartmann and Emil Reich and practiced through institutions such as People's Homes (Volksheim), Viennese Workers' Schools (Wiener Arbeiterschule) and People's Universities (Volkshochschule), starting from the late 19<sup>th</sup> century.

Enlightenment values adopted by logical empiricism, such as humanism and scientificity, serve the purpose of improving social life, notably with the construction of “utopias” as possible models for social engineering. The humanistic-scientific education is an “instrument of modernisation and rationalisation of the social life” (p. 47). To this end, visual education aims to communicate socially relevant statistical knowledge needed for constructing alternative models of economic organization and distribution. The focus on the working class as the primary audience enables visual education to address social inequality by bringing statistical literacy and knowledge of socio-economic facts to disadvantaged masses with limited access to the understanding of scientific theories. Yet, it also has an ideological function of countering the metaphysical worldview with empirical knowledge (excluding metaphysics is another reason Neurath prefers pictures over text in mass education). In Neurath’s pedagogy, the audience (workers) determine the means of communication (pictures). Many in the target audience are illiterate, and insecure when faced with high language. Moreover, the interwar Vienna was a multilingual city. In this context, a popular education method based on pictures appears as a unifying solution to linguistic diversity and cultural stratification. Their mnemonic quality and relative neutrality contribute to make pictures a better medium for a worker-oriented science communication than verbal language.

The third chapter (arguably the most informative one) documents the history of Isotype, from its emergence in the Museum of Society and Economy to its subsequent full achievement as a signature system that impacted the history of graphic design. It is accompanied by a selection of works representative of each period in the history of Isotype, showing how the style evolved and how the underlying principles of a visual education as a modern-day Enlightenment project are applied in the design of charts. At its emergence in the Museum of Society and Economy, visual statistics were conceived as a team work consisting in 5 stages: data collection, transformation (the key phase in turning the raw material into schematic representations to be displayed in charts), production of pictograms and other visual elements (colours etc.), composition of the chart, and organisation of the exhibition hall. Charts reproduced from the early period focus on local demographics, often showing argumentative connections between the income distribution and outcomes on health, and the improvement on public health over the years (this highlights the socialist municipality’s achievements in public services). Charts from the following “Die Bunte Welt” and “Gesellschaft und Wirtschaft” have a more global scope on world economy. Internationalisation of visual education from the 1930s is detailed, notably the establishment of an office in Berlin-Kreuzberg and cooperation with Isostat Institute in Moscow. Health education is another major aspect of the Isotype production shown here, followed by charts from *Modern Man in the Making*. The historical presentation shows the path of the Isotype method towards schematism (as opposed to the naturalistic forms of the earlier charts), simplicity, independence from the written language, reductivism and directness – principles explained in the last chapter.

The fourth chapter reflects on the theoretical framework of Isotype and details its constitutive principles (scientificity, efficiency in mediation, motivation). The process of “transformation” of a mass of statistics into a condensed structure suitable for a graphic

presentation is shown, with a particular focus on its systematization, reduction and expressive potential. Systematization unifies the visual environment through standardization of symbols and their combination rules, consistently used over a big number of charts. The pictograms that form the basis of reduction through serialization (repetition of a single visual unit to represent a quantity) are iconic, drawn in abstract, simple and characteristic lines. The process of transformation appears as translation of statistics into Isotype charts that represent the essentials of the related information in a direct, schematic way. Through significant background information, a detailed examination of charts and a study of their common methodological principles, the book succeeds in explaining the graphic novelty of Isotype as a function of its Enlightenment-inspired pedagogic vocation of reaching the masses in the view of transforming public life through scientific knowledge.

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