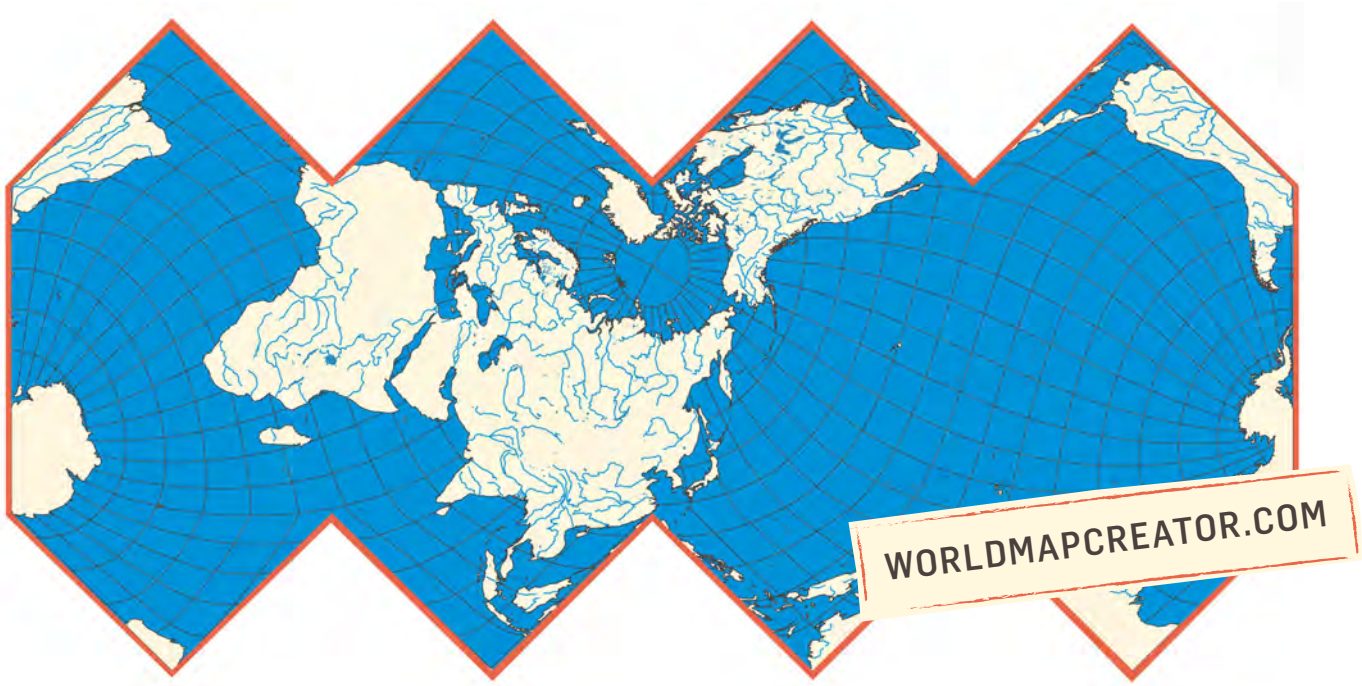
‹WORLDMAPCREATOR›

‹Mapping Worldmaps›



Summary:

The ‹Worldmapcreator.com› opens up a multitude of possible depictions of our world. This software offers the possibility of generating unconventional world maps, allowing us to contrast and question the maps we commonly use. In an interactive process, the geographic centring of world maps can be shifted to any chosen area and combined with any projection.

Until now, creating world maps using different projections has been restricted by the rules that determine the geographic area featured at the centre of the image. In conventional world maps, the horizontal centre of the image is usually the Equator, which means that these maps generally have the same image proportions.

Using the ‹Worldmapcreator.com›, unconventional world maps can be generated using functions such as "centring", "choice of projection" and different "design options" that can be modified at will by the user. Different geo-layers can enable the user to add or subtract several geophysical levels of information.

Create your own unconventional world map from your own subjective standpoint, and from the alternative perspective of your choosing!

PROJECT:

Keywords

Graphic design, world maps, generative graphics, critical cartography

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1. WORLDMAPCREATOR

INTRODUCTION: THE WORLD, WORLD MAPS AND US

WORLDMAPCREATOR.COM

The ‹Worldmapcreator.com› enables you to generate unconventional world maps, with different interactive possibilities allowing you to choose freely the centring and the projection. Different geo-layers allow levels of geographic information to be added or subtracted. Different design options also enable the world map to be modified.
It thereby becomes clear that world maps don't depict any kind of status quo, but only a subjective interpretation of the world at a particular point in time. Current world maps usually have the same image proportions, with the world mostly depicted from a Eurocentric perspective. The long double continent of America appears to our left, with Europe in the middle, its southern neighbour Africa under it, and with Asia, Australia and New Zealand stretching out to the right. But the ‹Worldmapcreator.com› is based on the principle of generating unconventional world maps: it enables you to place any geographical region at the centre of the image and to use any projection to depict the world. The mathematical derivation of these unconventional world maps remains conventional, however (see p. 5).

ABOUT PROJECTIONS. FROM RECONSTRUCTION TO DECONSTRUCTION, FROM THE NORM TO THE ALTERNATIVE

The ‹Worldmapcreator.com› is the practical section of the research project ‹Mapping Worldmaps›. It complements the theoretical section, namely the doctoral dissertation "Über Projektionen" ("About projections"), and vice versa. Both parts are directly correlated with each other. "About projections" offers insights into worldviews and world maps and their paradigmatic appearances. History makes us accustomed to different world maps and corresponding worldviews, and even today we are subject to a specific worldview that is reflected in world maps.
The concept of "projection" is understood to have two meanings here. On the one hand there is an ideal projection in the sense of a worldview that describes dominant paradigms of mental images, values, ordering principles, mind-sets, explanatory models of the world and suchlike. On the other hand there is the geometric projection that is the basis of any world map. Clearly, a paradigmatic depiction can result in a specific representation of the world. Every image of the world is confronted with the impossible task of projecting the three-dimensional surface of our globe onto two dimensions. A world map thus always entails deciding on a particular means of depiction and is never an objective reflection of geophysics. Both meanings of the concept of "projection" – thus a "projection" in both an ideological and a geometric/constructive sense – are self-referring. The geometric projection implies an ideological projection for a map, while the ideological projection brings about a corresponding geometric/constructive projection.

INTRODUCTION: WORLDMAPGENERATOR VS WORLDMAPCREATOR

PRELIMINARY STUDY: WORLDMAPGENERATOR.COM

The new software ‹Worldmapcreator.com› is based on the predecessor project "Ansichtssache(n)"[1] ("Point(s) of view") and the associated software ‹Worldmapgenerator.com‹. The ‹Worldmapgenerator.com› is primarily aimed at depicting the transformation of the surface of the globe into a world map, and thereby making comprehensible the principle by which unconventional world maps are generated. This process is demonstrated by the interactive "globe-surface model" that is at the heart of it. Furthermore, three applications visualise the unconventional world maps in different user contexts. The ‹Worldmapgenerator.com› offers initial insights into the problems addressed in the present project. The unconventional world maps that the software generates are abstract in nature and thereby have symbolic character. Different applications allow for a playful approach to the topic.

The ‹Worldmapgenerator.com› has been evaluated twice: 1) the software and the "unconventional world maps" were presented to an expert commission of nine people from the fields of media & context and education & publishing. They assessed the possible fields of application of these world maps. 2) Since its publication, the ‹Worldmapgenerator.com› has been accessed 44,670 times across the world (as of May 2017), which has resulted in a database of 3,921 world maps. These maps have been categorised and evaluated and ultimately served as the point of departure for the new software.

PRELIMINARY STUDY: WORLDMAPGENERATOR – WORLDMAPCREATOR.COM IN COMPARISON

	Worldmapgenerator	Worldmapcreator
Intention:	• The Worldmapgenerator uses different applications to demonstrate the transformation of the surface of the globe into a world map. • The worldmapgenerator questions the current worldview by means of alternative world maps	• Creating understanding: animations demonstrate the transformation of the globe's surface into a two-dimensional map. • Demonstrating diversity: A broad variety of world maps is possible – the current world map and worldview is subjected to critical questioning.
Applications:	• Three applications: Da Vinci, Tourist, Journalist	• One application with a multitude of world maps and worldviews possible
Access:	• Application via web browser	• Application directly via web browser. Optimised for desktop use. Improved performance
Geo-layers: (information density)	• Information density cannot be modified. Land mass, individual countries, water mass, coastlines, country borders, grid	• Geo-layers can be added individually with information on land mass, individual countries, water mass, coastlines, country borders, grid, cities, urban areas, rivers, lakes etc.
Choice of projection & zoom (function)	• Change of projection via a drop-down menu	• Choose projection • Choose zoom • Adaptive map composite (under construction)
Centring (function)	• Simple design possibilities available	Four possibilities for determining the centre: • Shifting the midpoint on the map, using the cursor • Move Centre: precise centring using 3D-coordinate regulator • Set Centre: entering geographical places manually, using coordinates or names • My Current Centre : the current standpoint of the user
Design options	• Simple design possibilities available	• The appearance of the different elements of the geo-layers can be changed (colours, line thickness etc.)
Sonstiges	• Generative graphic (Journalist application)	• Integrating new projections • Projection change through morphing

1 The preliminary project "Ansichtssache(n)" was created in 2012/2013. This project was supported and realised by the Bern University of the Arts (HKB). 12011VPT_HKB_Antr_Ansichtssache(n)

2. INITIAL SITUATION

FROM CONVENTIONAL TO UNCONVENTIONAL WORLD MAPS

PROJECTIONS

A projection is the mathematical basis for transforming the surface of the globe into a two-dimensional plane. The Lexikon der Kartografie describes a projection as a depiction of the geographical grid of the Earth's coordinates, or a part of it, onto a map by means of a geometric projection – in other words, by means of the algorithm employed to transform the globe into two dimensions. The conventional depictions of today's world maps are heavily determined by the projections on which they are based.

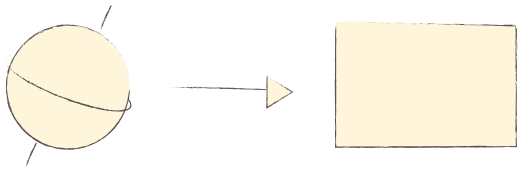
GREAT CIRCLES

Great Circles are the largest possible circles around a sphere. The Equator and all meridians are Great Circles. Great Circles can also be inclined; these cross the Equator at any chosen angle. However, as with the Equator, the plane that passes through the Earth does so through its centre.

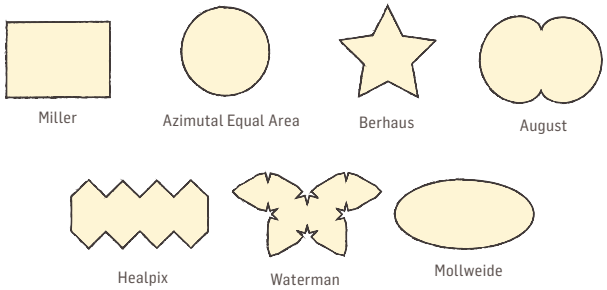
UNCONVENTIONAL WORLD MAPS, CONVENTIONAL DERIVATION

Using ‹Worldmapcreator.com›, you can choose whatever geographical region you wish for the centre of your map, independent of the projection. Here, the algorithms already used for projections are retained; an unconventional world map simply shifts the centre of the image. This is done by the flexible positioning of the Great Circle. In other words, whereas in conventional world maps the Equator usually lies in the horizontal centre of the image, it can be placed anywhere you like in an unconventional world map. Such unconventional world maps are thus subject to the same degree of distortion as conventional maps; it is just the geographical area affected that has changed. When constructing unconventional world maps in this manner, the mathematical transformation of the globe's surface onto a two-dimensional plane remains the same as in a conventional derivation; only the centring is different.
Up to now, the projection has defined the geographical centre in the middle of the image. Depictions do exist whose geographical centre is not on the Equator. But such a centring is usually defined by a specific projection and is not freely selectable.

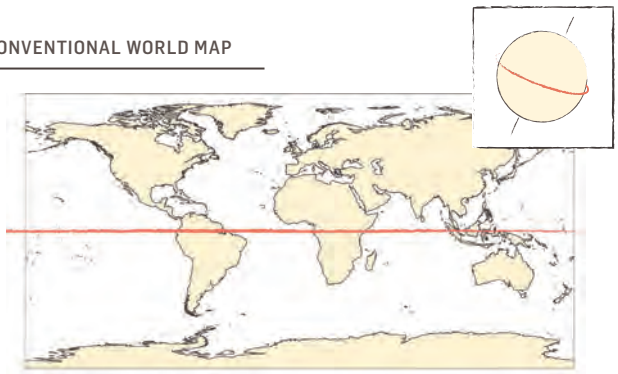
FROM THE GLOBS SURFACE TO PLAIN



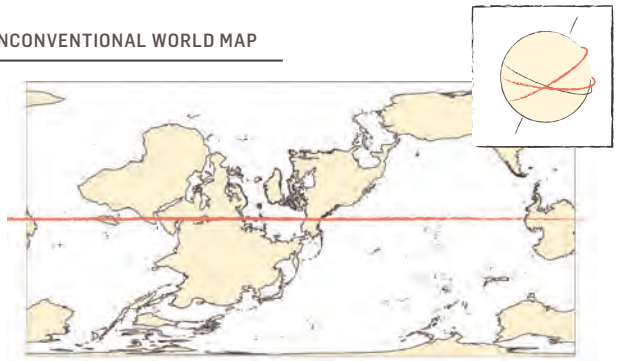
PROJECTION



CONVENTIONAL WORLD MAP



UNCONVENTIONAL WORLD MAP



3. CREATING WORLD MAPS

PROJECTION & ZOOM

1) The change in projection is made by choosing from a drop-down menu. The projection shift is depicted by a morph. The level of zoom can be adjusted by means of a slider. In future, the zoom and projection changes will be correlated; the user will be able to choose them using the “adaptive map composite” parameter.

CENTRING

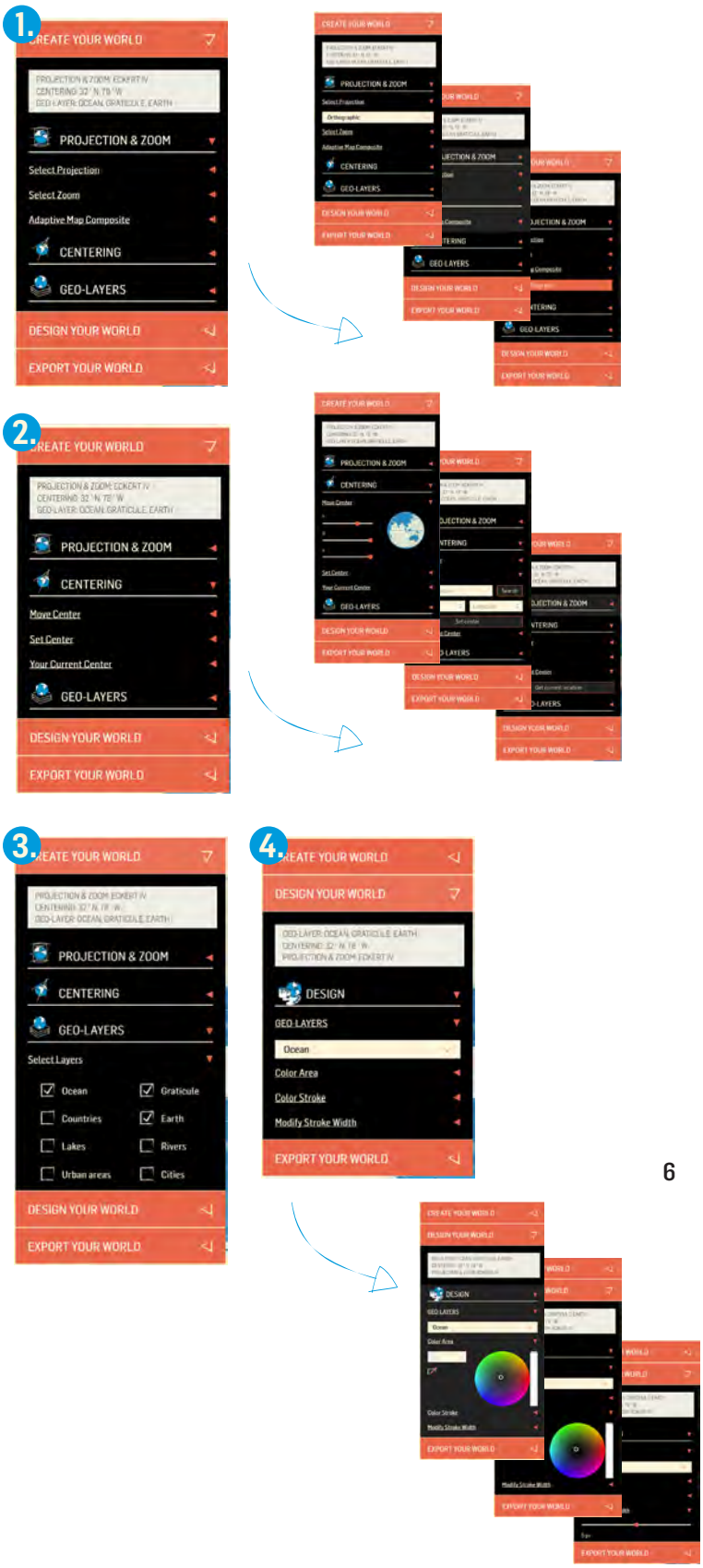
2) The centring of the world map can be achieved by various means. The midpoint can be shifted directly on the map using the cursor; a parameter-based centring can also be carried out (“Move centre”); the centre can be placed exactly (“Choose centre”); or the current standpoint of the user can be placed at the centre of the map.

GEO-LAYERS

3) A world map can be generated using different geo-layers. By adding or subtracting geo-layers such as oceans, rivers, countries etc., the world map can be provided with different geo-information.

DESIGN OPTIONS

The surface colours, line colours and line thickness can be chosen for the individual geo-features (countries, oceans, rivers etc.).



1. PROJECTION & ZOOM

Equirectangular

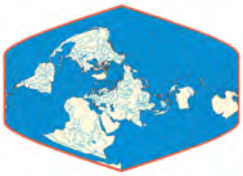
Waterman

August

Interrupted Homolosine

Azimutal Equal Area

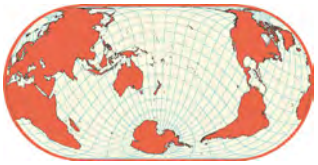
Berhaus



Baker

Bonne

2. CENTRING



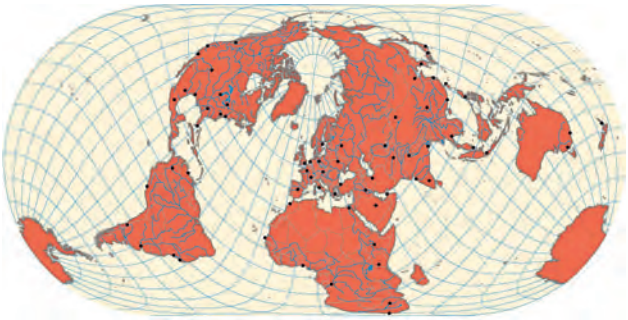
Auckland

Bern

Montréal

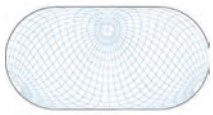
Wladiwostok

3. GEO-LAYERS



Coast line

Ocean



Graticule

Cities

Urban Areas

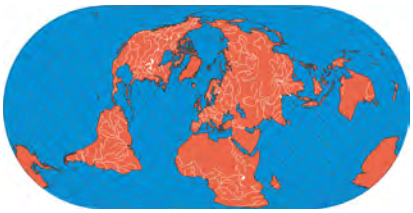
Lakes

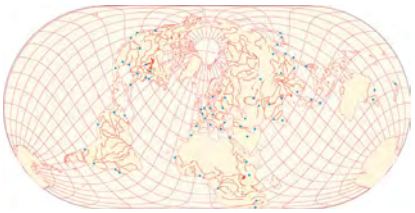
Rivers

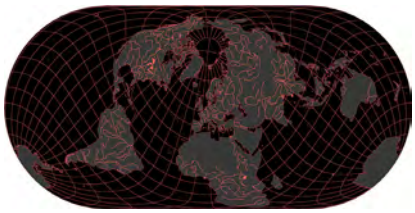
Borderlines

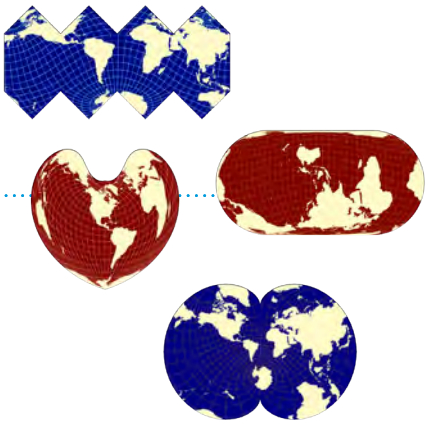
Landmass

4. DESIGN OPTIONS









4. THE DIVERSITY OF ALL WORLD MAPS

PROJECTIONS ARE VERSATILE

It's clear from the sheer variety of different world maps available: our reality is what our view of the world says it is. Worldviews determine our conception of realities that are themselves then reflected in world maps.

THE DIVERSITY OF WORLD MAPS:

The history of cartography shows us the potential variety of world maps: since time immemorial, we have depicted the world in different ways. Today, too, the many geometric projections of the world provide us with an abundance of possible world maps that have different image proportions.

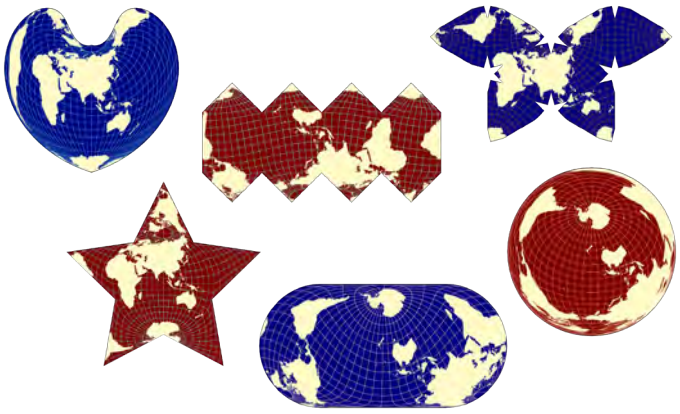
The existing diversity of cartographic depictions has barely been exhausted today. On the contrary, we generally use maps that are subject to the same conventions, time and again. Our current style of depiction has been so conditioned by specific norms that we are barely in a position to interpret unconventional world maps.

The principle of generating unconventional world maps offers a broad spectrum of different maps. It allows us to juxtapose images of the world that demonstrate the colourful diversity of potential world maps. It means we don't assert any claim for a specific map that is to be read as authoritative or as a ruling norm, but instead have a multitude of different constructions of reality that contrast with each other. The many alternatives offered epitomise the different subjective perspectives that can be adopted when looking at the world. This application of the ‹Worldmapcreator.com› shows us the broad spectrum of possible alternatives, and by leading us away from uniformity, such diversity can also lead us to new knowledge. Diversity allows us to circumvent conformism and the danger of consolidating convention, instead making claims for an abundance of different constructions of reality that can all exist simultaneously.

THE DIVERSITY OF WORLDVIEWS:

Different epochs and different cultures prove that there are many worldviews, all determined by temporal and cultural factors. History shows us that every epoch and every culture orients itself around its own construction of reality. It is even the case that every individual draws on his own subjective experience and constructs his own, individual reality from his own, individual perspective.
These manifestations of worldviews are thus the result of different influences that are in turn based on different sociocultural factors comprised of chance personal, historical circumstances. Such factors are even constitutive components of scientific conviction in that they become basic assumptions for a specific period of time. The possibilities for differently constructed worldviews are endless.
This endlessness of possible worldviews becomes evident when contrasting alternatives are offered. According to Feyerabend (1986), we can recognise the most important characteristics of a theory not by analysis, but by contrast. Knowledge emerges from incompatible alternatives; every single theory and every story, every myth and so on compels other theories to unfold more clearly. Feyerabend thereby deduces that knowledge can only be acquired through a variety of different ideas, without our lapsing into any absolute conformism or conventions.

> *"A diversity of theories is productive for science, whereas uniformity cripples its critical power. Uniformity endangers the free development of the individual".*[1]



Excerpt from: Über Projektionen: Weltkarten und Weltanschauungen. Von der Rekonstruktion zur Dekonstruktion, von der Konvention zur Alternative [2]

1 Feyerabend, P. (1986). Wider den Methodenzwang. S. 39
2 Stirnemann, J. M. (2016). Über Projektionen. Weltkarten und Weltanschauungen. Von der Rekonstruktion zur Dekonstruktion, von der Konvention zur Alternative