This is an original version of a science paper created by John Post on 17/07/2024, updated from the original which was written on 2/04/2018. This updated version is a perfected, cleaned up version of the original. This updated version contains no crucial changes to the original. This updated version was mainly created so that it can be published more easily. The original 2/04/2018 science paper can still be found via the link below. It is recommended to use this updated version.
https://www.twoeyedmonocularvision.com/_files/ugd/52ede2_25358f88793047 6ea7f68679d45211e4.pdf

4-Dimensional Perspective Projection

4-Dimensional Perspective Projection--(Natural 4-Dimensional Hologram)

Abstract

By changing 3-Dimensional perspective projection one will end up in 4-Dimensional perspective projection. The change of Dimensional perspective projection is accomplished by reducing 3-Dimensional perspective projection. To reduce 3-Dimensional perspective projection and to make 4-Dimensional perspective projection visible with one/single eye or with another recording device like a camera while extra external projection as a tool is used, then use simultaneously a one/single eye or camera and use a parallel viewing direction with respect to the additional external projections and project as close as possible to the optical axis of the viewing direction of one/single eye or the camera and keep the exit point of the projection of the one/single eye or camera as close as possible to the exit point of the additional external projection device. Experiment 1 and 2 have been carried out in this way which results in a new/different shaped projection and floating depth symptoms.

Experiments 3 and 4 were not carried out with a combination of one/single eye or camera and this parallel viewing direction, these two experiments are just to inform and to remind what is known as 2-Dimensional perspective projection and what is 3-Dimensional perspective projection. Experiment 3 and 4 confirm that 3-Dimensional perspective projection and known as 2-Dimensional perspective projection are ruled out. For this reason I have no other options left than to categorize the perspective projection in experiment 1 and 2 as a 4-Dimensional perspective projection.

All experiments have been carried out with extra external projection as a tool, because projection has no fixed Dimension and therefore adapts to the Dimensional perspective where the viewer or camera is in. The data consists of 5 experiments (including an extra experiment 5) where the different Dimensional perspective projections are visible/recorded.

Introduction

If One Changes The Perspective In Space,
The Perspective Of A Projection Becomes 4-Dimensional

Based on: the absence of 3-Dimensional depth perspective projection

Phase 1

The extra external projection must travel in a fixed parallel direction with the viewing direction of the eye or camera and as close as possible to each other's optical axes and with each other's exit points as close as possible to each other. In case of the eye the Dimension of the perspective projection has now been partially changed to be 4-Dimensional *Reference 1.*

For 4-Dimensional perspective projection to be visible with the eye, combine phase 1 and 2. Between these two phases 4-Dimensional perspective projection will not occur.

Phase 2

The now parallel projection should be viewed with one/single eye (which means covering one eye). Doing so increases 4-Dimensional perspective projection. At this moment the loss of 3-Dimensional perspective is so immense that a new perspective projection occurs which results in a 4-Dimensional perspective projection *Reference 2.*

Data experiments

5 visual observation experiment images, including recorded on camera - including an extra experiment 5.

• Experiment 1,2,5 show 4-Dimensional perspective projection which is carried out with one/single eye observation and camera and extra external projection. The eye is a good observer so a high quality 4-Dimensional perspective projection can be seen/recorded with the eye. • A lower quality 4-Dimensional perspective projection can be recorded with a camera. • One/single eye, two eyes (binocular vision) and camera observation can achieve and record the same result with regard to perspective projection.

• 4-Dimensional perspective projection can not be seen in experiment 3 and 4. • Experiment 4 is to remind how 2-Dimensional perspective projection is known. Experiment 3 shows a 3-Dimensional perspective projection.

Experiment 1

Materials: flashlight. 3-Dimensional model airplane. Frontal wall (known as 2-Dimensional-flat wall). Digital camera (because one/single eye observation and a digital camera achieve the same result). One/single eye observation. **Setup:** the camera is placed in front of the right eye, the left eye is closed/covered. Flashlight is placed on the forehead in the pineal gland area. All projection equipment used, like the eye, the camera and flashlight must run parallel to each other's optical axis and as close as possible to each other's optical axis with all exit points positioned as close as possible to each other. Distance between wall and airplane: 5 centimeters. Distance between airplane and flashlight: 3 centimeters.

Explanation of the experiment: a projection of a shadow is cast on a frontal wall (known as a 2-Dimensional -flat wall). If one observes with one/single eye very precisely and almost perfectly parallel in a fixed position with the direction of the projection, then the projected shadow will behave like a 4-Dimensional perspective projection, with new/different floating depth symptoms underneath the airplane. Notable is that the projection is not distorted. On this recorded image the 4-Dimensional perspective projection with new/different floating depth symptoms are mainly visible around the engine and the wheel of the airplane.

To make 4-Dimensional perspective projection more immersive visible, use one/single eye and cast a shadow as sharp as possible on a glossy white surface, use an object which has clear 3-D forms to cast the shadow, keep the object 1 centimeter away from the wall and keep the object 1 centimeter away from the flashlight and give the eye time to adapt to 4-Dimensional perspective projection.
I point out that to achieve 4-Dimensional perspective projection it is not necessary to use a glossy white surface or specific 3-D models, and you can also stand much further away from the wall and with the airplane model much further away from the flashlight. I would also like to draw attention to the fact that this experiment can be done but is difficult because the model airplane can easily block 4-Dimensional perspective projection from your sight. One has to concentrate for example underneath the model airplane for 4-Dimensional perspective projection to be seen.

· The problem that the model airplane blocks 4-Dimensional perspective projection from your sight is not the case in experiment 2.

1.

Experiment 2

Materials: a led video projector. Digital camera (because one/single eye observation and a digital camera achieve the same result). One/single eye observation. 3-Dimensional skewed/irregular depth walls. **Setup:** The camera is placed in front of the right eye, the left eye is closed/covered. The video projector is placed on the forehead in the pineal gland area. All projection equipment used, like the eye, the camera and the video projector, must run parallel to each other's optical axis and as close as possible to each other's optical axis with all exit points positioned as close as possible to each other.

Explanation of the experiment: in this experiment a different type of projection is used, namely a led video projection. If one observes with one/single eye very precise and almost perfectly parallel in a fixed position with the direction of the projection then the video projection will behave like a 4-Dimensional perspective projection, with new/different floating depth symptoms. The 4-Dimensional perspective projection is no longer blocked by an object, like the model airplane, which was the case in experiment 1. The projection is now being cast on skewed/irregular 3-Dimensional walls with depth that are connected to each other at 90 degree angles. Notable is that the projection is not distorted by the skewed/irregular walls with depth, this means the projection does not behave 3-Dimensionally, instead new/different floating depth symptoms are visible, and one can now see the floating 4-Dimensional perspective projection in its full form.

· In experiment 3 the reason why the 4-Dimensional perspective projection is not a 3-Dimensional perspective projection will be explained.

2.

Experiment 3

Materials: a led video projector. Digital camera. Two eyes observation (binocular vision) or one/single eye observation while the other eye is closed/covered and a camera because they achieve the same result. 3-Dimensional skewed/ irregular depth walls. **Setup:** two eye observation (Binocular vision) and one/single eye observation while the other eye is closed/covered. The projector is not placed in an almost perfect parallel direction with one/single eye or a camera and not parallel as as possible to each other's optical axis and not with all exit points positioned as close as possible to each other.

Explanation of the experiment: in this experiment video projection is used. This experiment is to show that the 4-Dimensional perspective projection which can be seen in experiment 2 is not 3-Dimensional.
This experiment is just to mention what is 3-Dimensional perspective projection (a distorted projection), and to remind how projection should behave when it is adapted to a 3-Dimensional environment with skewed/ irregular walls.

3.

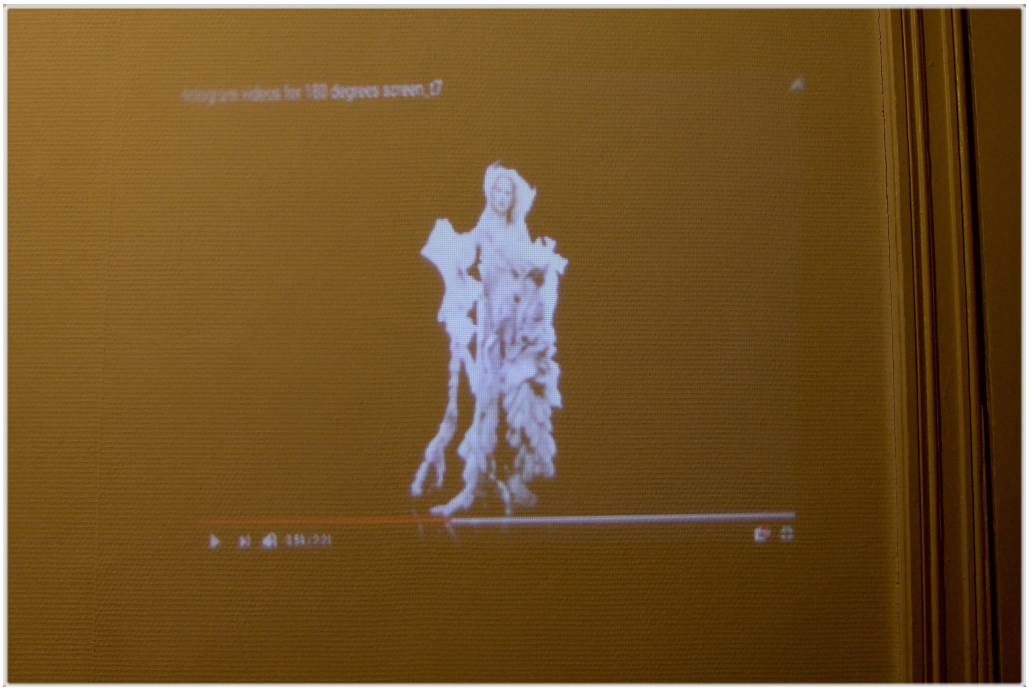
Experiment 4

Materials: a led video projector. Digital camera. Two eyes observation (binocular vision) or one/single eye observation while the other eye is closed/covered and a camera because they achieve the same result. Frontal wall (known as a 2-Dimensional-flat wall). **Setup:** two eye observation (Binocular vision) or one/single eye observation while the other eye is closed/covered. The projector is not placed in an almost perfect parallel direction with one/single eye or a camera and not parallel as close as possible to each other's optical axis and not with all exit points positioned as close as possible to each other.

Explanation of the experiment: in this experiment video projection is used. This experiment is just to show that the 4-Dimensional perspective projection conditions which can be seen in experiment 1 and 2 are not 2-Dimensional perspective projections. This experiment is to mention what is known as 2-Dimensional perspective projection and to remind how a perspective projection behaves when it is adapted to what is known as a 2-Dimensional (flat frontal wall).

This is known as a 2-Dimensional perspective projection which everyone is familiar with, a projection which is viewed with two eyes (binocular vision) or viewed via one/single eye observation or camera but then a not parallel enough projection not as close as possible to each other's optical axis and not with all exit points positioned as close as possible to each other projected on a frontal wall or canvas during a presentation.

· Because the two eyes are used binocularly and the projection is not parallel enough with the viewing direction of the camera or one/single eye, 4-Dimensional perspective projection with depth will never occur.



4.

Extra experiment 5

Materials: digital camera. Flashlight from digital camera. One single eye observation (because one single/eye observation and a digital camera achieve the same result). 3-Dimensional skewed/irregular depth walls. Objects (human being and interior). **Setup:** the camera is placed in front of the right eye, the left eye is closed/covered. Flashlight from the camera is placed on the forehead in the pineal gland area. All projection equipment used, like the eye, the camera and flashlight must run parallel to each other's optical axis and as close as possible to each other's optical axis with all exit points positioned as close as possible to each other.

Explanation of the experiment: this experiment is not intended to support the theory because not enough research has been done yet. I just mention this experiment because it came forward. The result of this experiment does create a 4-Dimensional perspective projection, even though this experiment is not included.

A 4-Dimensional perspective shadow projection from a human being is cast on 3-Dimensional skewed/irregular objects. The mid air with depth floating 4-Dimensional perspective projection does not change in size regardless of the distance between the observer/camera and the projected surfaces. The absence of 3-Dimensional perspective projection and a form of infinity seems to play a role here.

5.

A: The wall surface on which the shadow is projected is the furthest away from the observer.

B: The stone vase on which the shadow is projected is closer to the observer than the surface of the wall.

C: The sign that hangs on the fence on which the shadow is projected is closer to the observer than the wall and the stone vase.

D: The floor on which the shadow is projected is closer to the observer than the wall, the stone vase and the sign that hangs on the fence.

Results

Main results experiments

Experiment 1: we observe a 4-Dimensional perspective projection (not distorted projection). 3-Dimensional perspective projection disappears. A 4-Dimensional perspective projection with new/different floating depth symptoms in mid air appears.

Experiment 2: we observe a 4-Dimensional perspective projection (not distorted projection). 3-Dimensional perspective projection disappears. A 4-Dimensional perspective projection with new/different floating depth symptoms in mid air appears.

Experiment 3: we observe a 3-Dimensional perspective projection (distorted projection).

Experiment 4: we observe what is known as a 2-Dimensional perspective projection (distorted projection).

Additional result experiment 5

Extra information that came up during experiment 1 and 2 is explained in experiment 5. This extra information needs further research. This extra experiment 5 is not intended to support the theory.
Extra experiment 5: there is another phenomenon that emerged during experiments 1, 2, and 5 which is that the 4-Dimensional perspective projection seems not to change size regardless of the distance between the observer/ camera and the projected surfaces. The absence of 3-Dimensional perspective projection and infinity seems to play a role here.

Summary experiments

In experiment 1, 2 and 5 we see a different perspective projection and new/different depth symptoms as compared to experiment 3 and 4. Experiment 3 and 4 supports the fact that the perspective projection in experiment 1, 2 and 5 can not be 2-Dimensional or 3-Dimensional.

Observation and recording device

- All digital recorded images of the experiments were recorded according to one-eye principle, which means the other eye was blocked by covering, because the results are the same since a camera and one-eye principle can achieve the same result in perspective projection.
* For 4-Dimensional perspective projection to be visible with the eye combine phase 1 and phase 2, or just phase 1 for recording on camera.

Conclusions

Main Conclusion

The absence of 3-Dimensional perspective projection results in 4-Dimensional perspective projection.
4-Dimensional perspective projection is observable/recordable after entering the absence of 3-Dimensional perspective projection far enough. To get far enough into the absence of 3-Dimensional perspective projection and to get it observable, then project with extra external projection parallel as close as possible to the optical axis of all projection devices ‘also to one/single eye and a camera’ and with all exit points positioned as close as possible to each other, this results in a 4-Dimensional perspective projection to occur.

Experiment 3 and 4 rejects the perspective projection is 3-Dimensional or 2-Dimensional. A new/different kind of depth and perspective projection can be seen in experiment 1, 2 and 5. For these reasons there are no other options left than to categorize the perspective projection as a 4-Dimensional perspective projection.

It has also been considered to name this new perspective projection 1-Dimensional, but since 1-Dimensional perspective projection will not show depth it was dismissed.

Discussion

Discussion

An intuitive explanation for 4-Dimensional perspective projection phenomenon is that when moved so far into the absence of 3-Dimensional perspective projection and depth one would observe/record a flat **2-Dimensional perspective projection** without depth. However this **=** not the case when we are looking at the perspective projection in experiment 1, we unexpectedly see a floating shadow with depth symptoms which would be impossible if we are projection on a flat (frontal wall) observing from what is known as a 2-Dimensional perspective. This was a reason to dismiss that the perspective projection is 2-Dimensional.

3-Dimensional perspective projection was also dismissed by performing experiment 2. A reason to dismiss 3-Dimensional perspective projection is because 3-Dimensional perspective projection is not an one eye observation and certainly not in combination with this parallel line of view with the projection (both one eye and this parallel projection are not specifically known for 3-Dimensional perspective) this means that we cannot say that the depth phenomenon in experiment 1 is because one eye is adjusting to see a better 3-Dimensional perspective projection while in experiment 2 the eye now suddenly adjust to see a better 2-Dimensional perspective projection, I don't think this combination can be true (reminder: experiments 1 and 2 where also carried out under the same conditions).

2-Dimensional perspective projection does not really seem to be present, nowhere does the experiments show that there is a projection that behaves in a somewhat known as 2-Dimensional way, because the projection should at least adapt a little bit in terms of shape to a surface which has a somewhat 2-Dimensional shape such as a flat frontal wall because this kind of shape comes closest to what is known as a 2-Dimensional shaped surface, but again this is not the case because this adaptation does not take place. For this reason and because the projection is not parallel enough, as explained in experiment 4, experiment 4 is best regarded as 3-Dimensional perspective projection.

There must be for example fog if one wants to project a kind of similar **4-Dimensional perspective projection** while the **perspective projection** is being projected not parallel enough not as close as possible **on the optical axis** and not with all fixed exit points as close as possible to each other or viewed with binocular vision which even then would be far from what **=** a true **4-Dimensional perspective projection** and would just be a fake 4-Dimensional perspective projection.

For these reasons and more, I could simply not find any scientific evidence we are observing a 3-Dimensional or 2-Dimensional perspective projection, but instead a new/different type of perspective projection.

It has also been considered to name this new/different perspective projection 1-Dimensional, but since 1-Dimensional perspective projection will not show depth it was dismissed.

References

Reference 1: *The projection must travel in a parallel direction with the viewing direction of the eye. If we do not respect this parallel direction of the projection with the viewing direction of the eye then perspective projection will go into 3-Dimensional depth and 3-Dimensional perspective projection would be created which corresponds with the 3rd coordinate axis of the 3-Dimensional cartesian coordinate system.*
https://mathinsight.org/vectors_cartesian_coordinates_2d_3d#vector3D

Reference 2: *The now parallel projection should be viewed with one/single eye. If we do not respect the projection is viewed with one/single eye, 3-Dimensional perspective projection depth would be created which corresponds to Binocular vision.*
https://www.novavisioncenter.com/blog/depth-perception-vs-binocular-vision/

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Intellectual property in connection with commercialization of products / applied physics

The following device and the intellectual property rights belong to the creator / author. The intellectual property rights are already officially registered on a specific date.

What subsequently emerged from this work is the design of an optical instrument (the bimonocular vision optical instrument), an eye frame which is fully developed so that monocular vision in pure form can be created with both eyes at the same time over the full field of view of both eyes, which results in that 4-Dimensional perspective projection (Natural 4-Dimensional Hologram), with for example, external projection like video projection or shadow projection which can be created and projected into your space and can be observed with both eyes at the same time, which is more comfortable and more practical than using one/single eye.

In entertainment the bimonocular vision optical instrument eye frame can be used to project a 4-Dimensional immersive experience with projection. Like interactive art installations with long throw/overhead video projectors at exhibitions or museums, etc. or an interactive art installation like augmented reality headsets with a mini projector integrated in the eye frame.

In ophthalmology the bimonocular vision optical instrument eye frame can be used singly (without external projection) for example as an alternative to an eyepatch which increases the monocular field of view by ± 30%. The instrument can also be used for binocular vision dysfunctions in general. For example, it can be used in some cases as an alternative/or addition to prism glasses.

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