Relationship between the advancing/retreating properties of colors and object shape distortion

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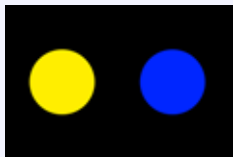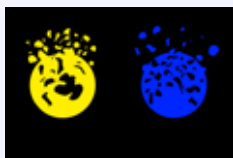浅野晃，島田侑，浅野（村木）千恵，関西大学，日本

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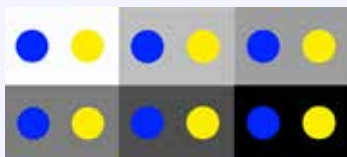Please feel free to take photos of the poster.

■ Advancing / retreating colors and object shapes
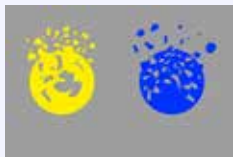

Yellow is known to be more advancing than blue
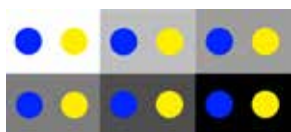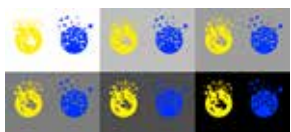

At any distorted shapes?

At any background?

At any combination of distortion and background?

■ Online experiment

The gray levels are indicated as 100 (white), 75, 62, 49,31, and 0 (black), according to the brightness indicator of the app "ibisPaint X."
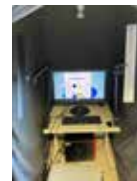
Non-distorted disk pairs on different backgrounds were shown in random order, and then the distorted ones were shown.

The respondents selected one disk that looked **larger** for each pair.
(The respondents were not allowed to answer that the sizes were the same.)

■ Darkroom experiment

It is difficult to control the actual size and color in the online experiment.

Display:
EIZO CG279
in Adobe RGB mode
Disk-pair image size:
135 mm x 90 mm
Display-eye distance: 50 cm

By Adobe Photoshop color picker,
Blue: RGB=(0,0,255), L = 33 in Lab
Yellow: RGB=(255.255,0), L = 93

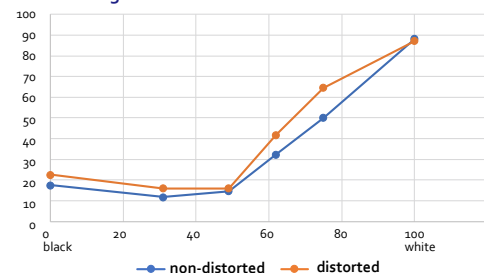Background gray levels were set to L = 100 (white), 93, 73, 53, 33, 16, and 0 (black).

The respondents answered similarly to the online experiment.

■ Experimental results

% of respondents answering the blue looked larger
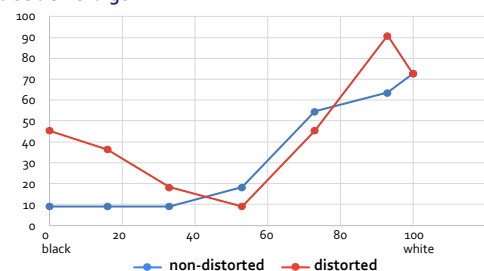
Online experiment (34 respondents)

% of respondents answering the **blue disk is larger**

Background gray level (%)

● non-distorted   ● distorted

Darkroom experiment (11 respondents)

% of respondents answering the **blue disk is larger**

Background gray level (%)

● non-distorted   ● distorted

The shape distortion influences the advancing/ retreating property in the darkroom experiment.

Akira Asano's web site, Facebook/twitter etc. 👉 are accesible via this QR code.

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The Chinese language version of my statistics textbook has been published by a Taiwanese publisher. 👉

台灣的一家出版社出版了我的統計學教科書的中文版。

浅野晃(陳朕疆・訳, 洪萬生・審訂)
擺脫挫折的統計學入門, 世茂出版(2019)