

## 要 旨

### 3次元構造知覚をもたらす回転運動が 対象の評価及び脳活動に与える影響

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画面上における商品の呈示手法として、商品を回転させることで3次元構造の知覚を可能にする手法が用いられるようになった。3Dの映像は、それ自体がエンターテインメントの要素を持つと考えられており、実際に3Dによる商品呈示が消費者の購買行動に好ましい影響を与えたという報告もある。本研究では、3次元構造が知覚される回転呈示が対象の評価に与える影響について検討するため、3次元構造が比較的複雑であり、それが評価に影響を与えると考えられる自動車及び花を対象とし、3次元構造知覚をもたらす回転呈示、3次元構造をもたらさない回転呈示、静止画像の3つの呈示手法を用いて、対象の好ましさの評価する課題を行った。また、課題遂行時にfMRIを用いて脳活動を計測することで、呈示手法の違いにより報酬系の活動に差が生じるかどうかを検討した。その結果、主観評価では先行研究と同様に3次元構造が知覚される回転呈示において対象の評価が最も高くなり、脳活動では報酬関連部位である尾状核の有意な賦活がみられた。このことから、3Dによる呈示が対象の評価に好ましい影響を与えることが主観評価のみでなく脳活動においても示唆された。

キーワード 3次元構造知覚, 運動からの構造復元, fMRI, 報酬系, 尾状核

# Abstract

## Effects of presentation with 3D rotation on evaluation of objects and evoked brain activity

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As a technique for presentation of commodities on a display, rotating goods to show three-dimensional structure as an animation is often used. The three-dimensional presentation itself has an entertainment factor and previous studies reported that the 3D presentation of goods with rotation influenced consumers to purchase them. In this study, to investigate the effects of the 3D rotation on evaluation of objects, cars and flowers were used for evaluation as the three-dimensional structures of these materials are relatively complex and expected to have some effects on their evaluation. Three types of presentation were used in this study, a rotation type which induces three-dimensional structure perception, another rotation type which doesn't induce the perception, and no rotation. Brain activity was measured with fMRI during the presentation to examine the related region as well as analyzing the difference between the score of the subjective evaluation with 3D rotation compared to the scores of other types of presentation. The results showed that the score with 3D rotation was highest in the presentation conditions and the caudate nucleus which is related to reward showed significantly greater activation with 3D rotation. These results suggest that the positive effects of 3D presentation which is found by the analysis of the subjective evaluation score were also shown from brain activity.

**key words**     three-dimensional depth structure perception, structure from motion,

fMRI, reward-system, caudate nucleus