Theoretical predictions of the perceived motion-direction of same-spatial-frequency plaid stimuli

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Data

METHOD

Component 1 + Component 2 = “Plaid”

Velocity of
Grating motion is component produce identical image

Type 1
Rigid direction
Vector sum of velocity

C10
C20

Type 2
Rigid direction
Vector sum of velocity

C3
C1+C2

Component ambiguous. All the velocities of component a with the same component produce identical image segments within the aperture.

Every plaid can be uniquely represented as a snapshot of the plaid moving behind an aperture. Within the aperture, the motion of any two components (above) and snapshot (below) is identical.

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http://www.cogsci.uci.edu/~whisp/ → Sperling → Publications → voila!

DATA

Vector sum of motion strengths

THEORY

Perfect power law: 2 temporal frequencies x 3 subjects

Pure theoretical predictions. Zero parameters estimated from the data

Different component angles (abscissa); two contrast ratios (curve parameter)

Full range of contrast ratios
Full range of absolute contrasts
Full range of temporal frequencies

Contrast of C_slow / Contrast of C_fast