

Named Optical Illusions

© Dr. John Andraos, 2003 - 2011

Department of Chemistry, York University
4700 Keele Street, Toronto, ONTARIO M3J 1P3, CANADA

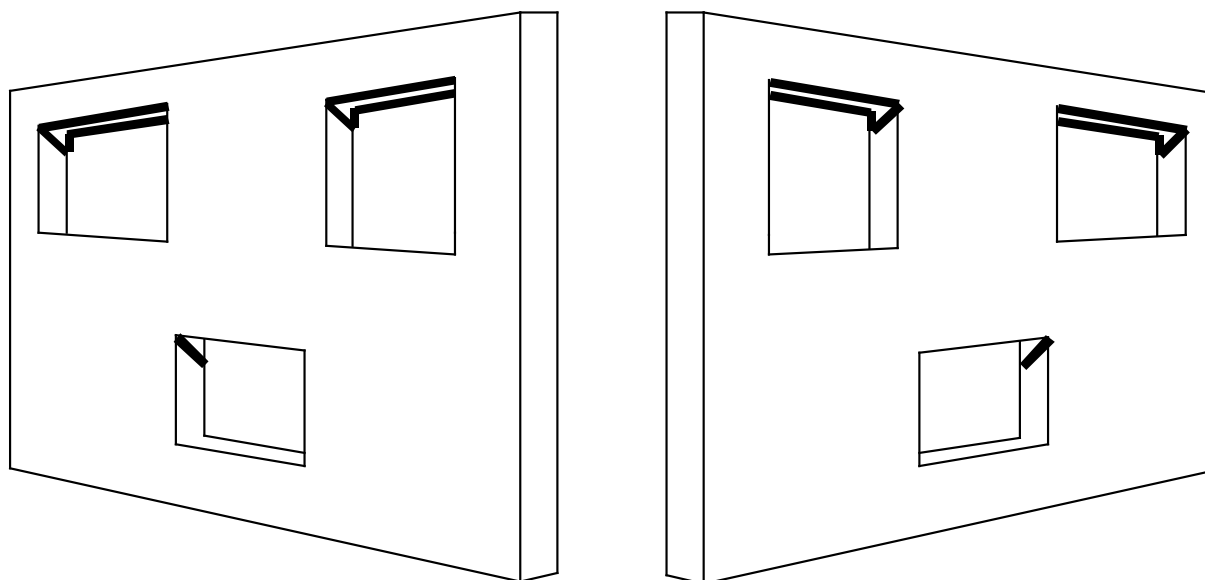
For suggestions, corrections, additional information, and comments please send e-mails to c1000@careerchem.com

<http://www.chem.yorku.ca/NAMED/>

Ames window

Ames, A. Jr. *Psychological Monographs*, **1951**, 65, No. 324

Pastore, N. *Psychological Rev.* **1952**, 59, 319

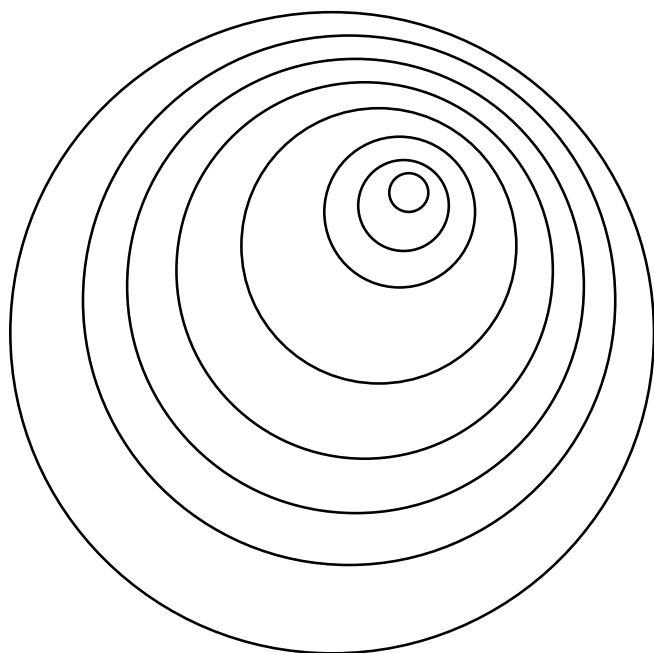


Benham's top

Benham, C.E. *Nature* **1895**, 51, 321

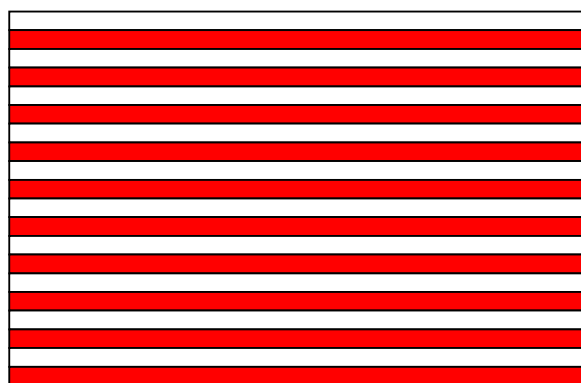
von Campenhausen, C.; Schramme, J. *Perception* **1995**, 24, 695

Benussi's figure (stereokinetic effect) (1927)



Bezold effect

von Bezold, W. *Die Farbenlehre im Hinblick auf Kunst und Kunstgewerbe*, Braunschweig: Berlin, 1862



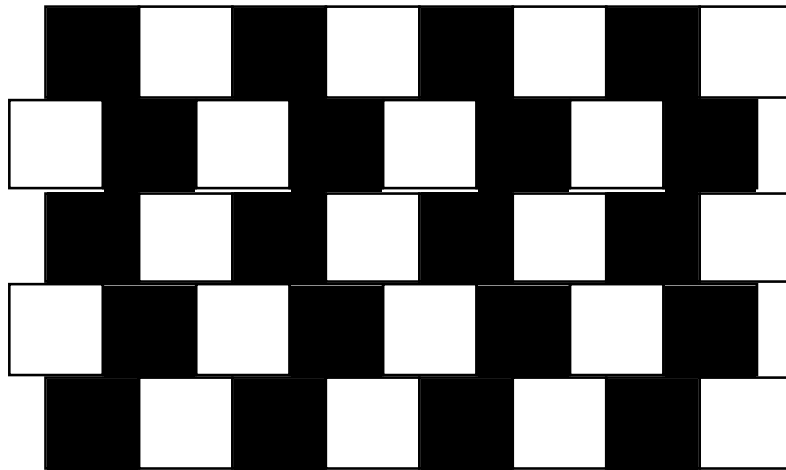
Binocular vision (stereopsis)

Wheatstone, C. *Phil. Trans. Roy. Soc.* **1838**, 128, 371

Wheatstone, C. *Phil. Trans. Roy. Soc.* **1852**, 142, 1

Café wall illusion

Gregory, R.L.; Heard, P. *Perception*, **1979**, 8, 365



Craik-O'Brien-Cornsweet illusion (effect)

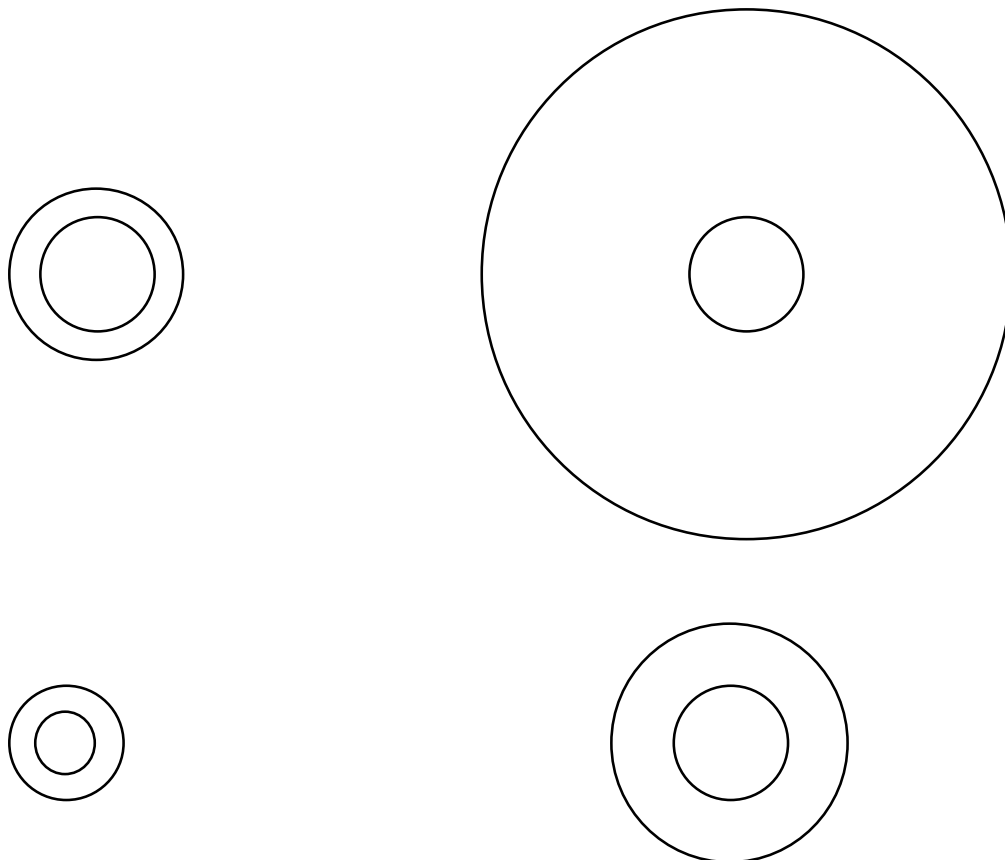
O'Brien, V. J. *J. Opt. Soc. Am.* **1958**, 48, 112

Craik, K.J.W. *The Nature of Psychology: a selection of papers essays and other writings*, Cambridge University Press: Cambridge, MA, 1966

Cornsweet, T.N. *Visual Perception*, Academic Press: New York, 1970

Delboeuf illusion

Delboeuf, J.L.R. *Bull. Acad. Roy. Belg.* **1892**, 24, 545

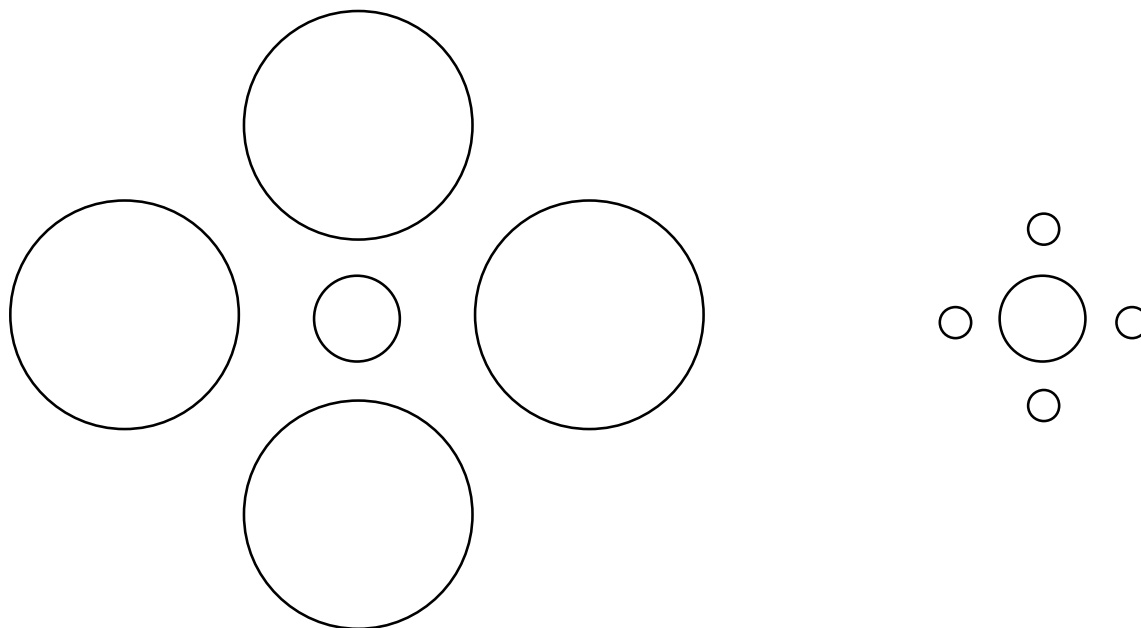


Duchamp's figure (rotoreliefs) (1935)

Ebbinghaus (or Titchener) illusion

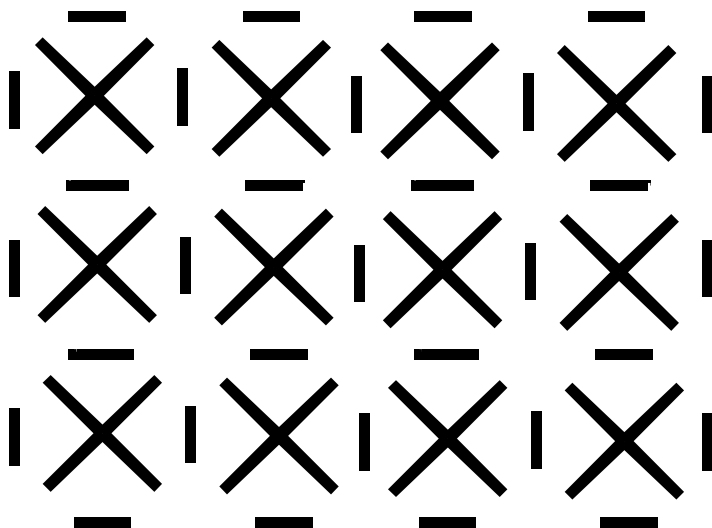
Ebbinghaus, H. Z. *Psychol.* **1897**, 13, 401

Titchener, E.B. *Lectures on the Elementary Psychology of Feeling and Attention*,
Macmillan: New York, 1908



Ehrenstein illusion (figure)

Ehrenstein, W. Z. *Psychol.* **1941**, 150, 83



Emmert's law

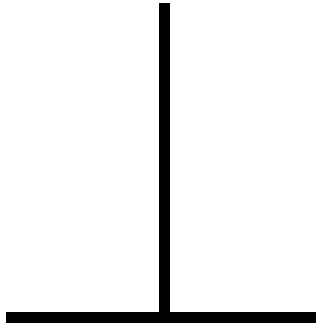
Emmert, E. *Klinische Monatsblätter für Augenheilkunde* **1881**, 19, 443

Fechner colours

Fechner, G.T. *Ann. Physik u. Chem.* **1838**, 232, 227

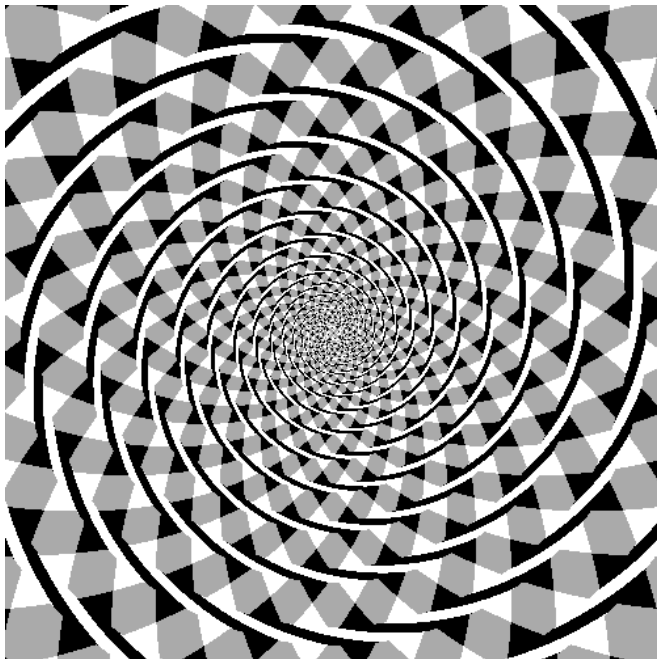
Fick illusion

Fick, A. *Da errone quodam optic asymmetria bulbi effecto*, Marburg, 1851 (Dissertation)



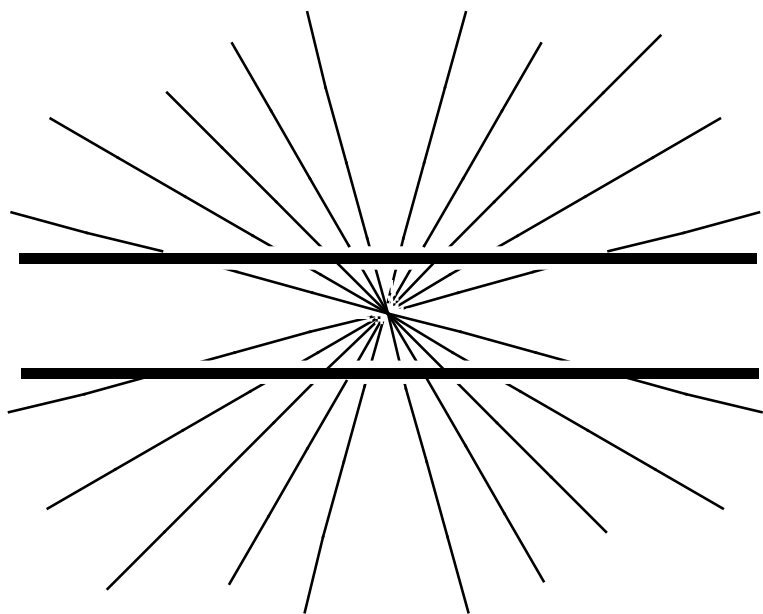
Fraser's spiral

Fraser, J. *Brit. J. Psychol.* 1908, 2, 307



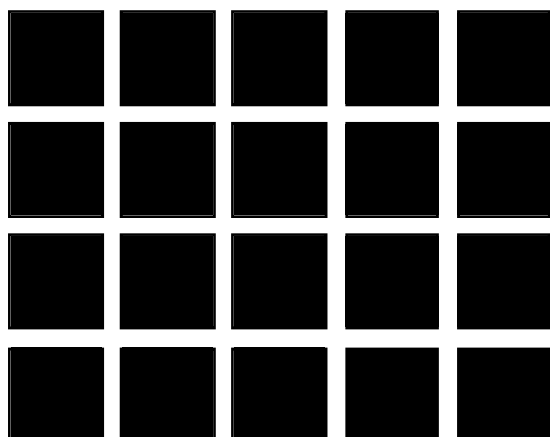
Hering illusion

Hering, E. *Beiträge zur Physiologie. Zur Lehre vom Ortsinne der Netzhaut*, 5 parts, Leipzig, 1861 - 1864



Hermann grid

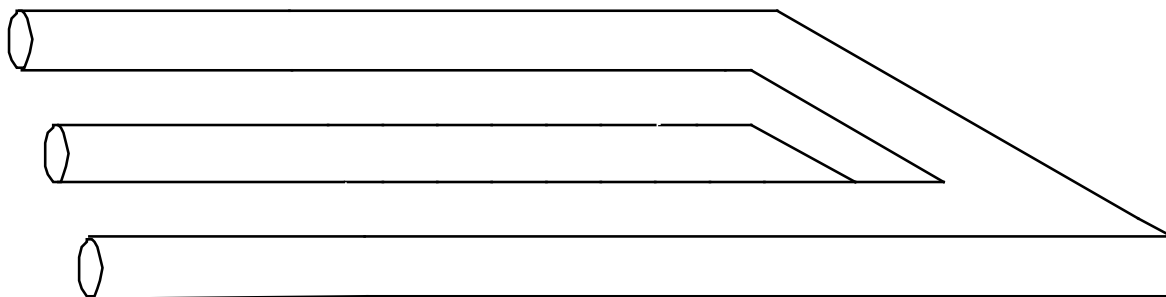
Hermann, L. *Pflügers Archiv. ges. Physiol.* **1870**, 3, 13

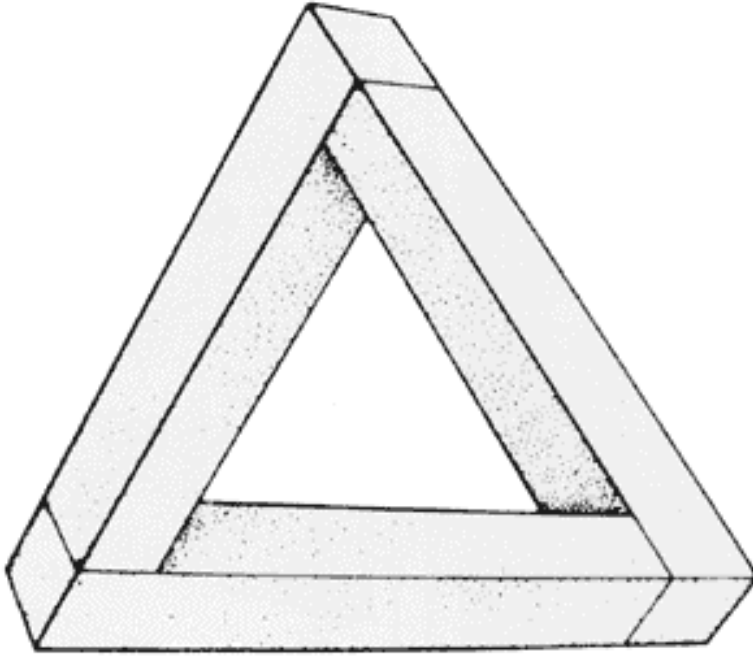


Impossible figures

Penrose, L.S.; Penrose, R. *Brit. J. Psychol.* **1958**, 49, 31

Escher, M.C. *The Waterfall* - lithograph, 1961

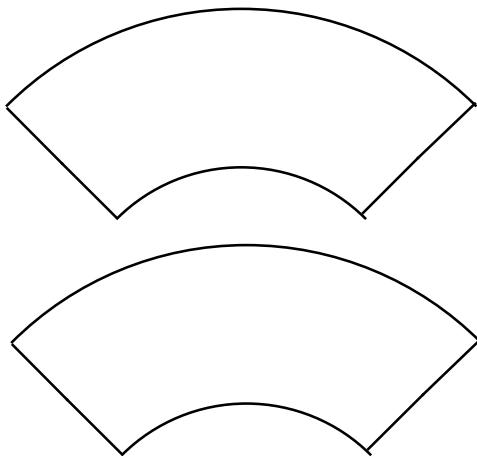




Jastrow illusion

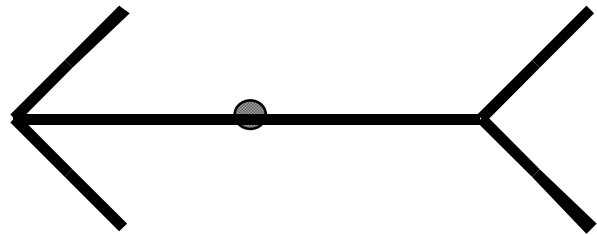
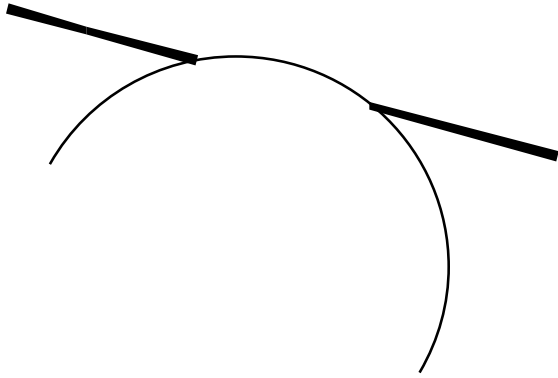
Jastrow, J. *Mind* **1889**, 11, 539

Jastrow, J. *Am. J. Psychol.* **1891**, 4, 381



Judd illusion

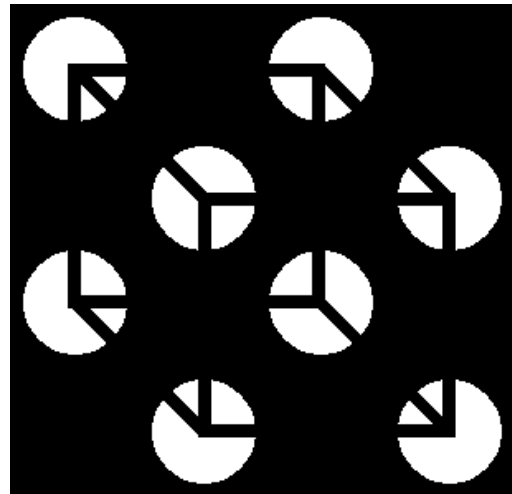
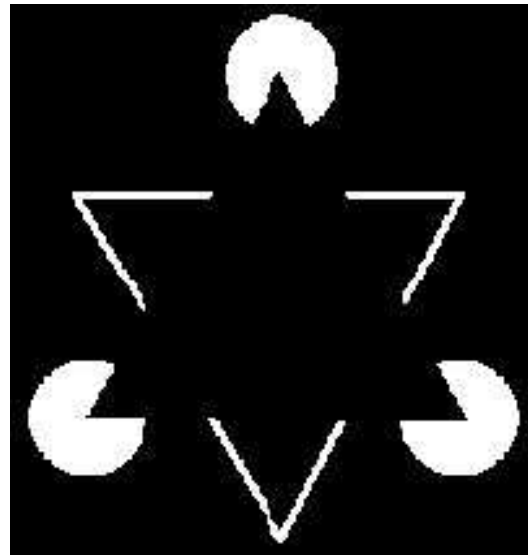
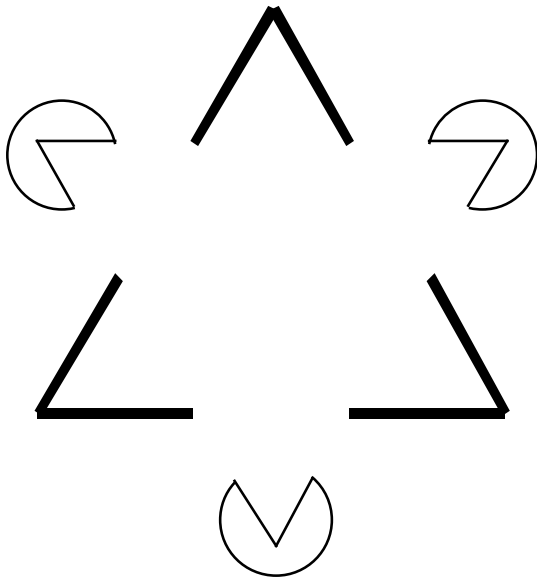
Judd, C.H. *Psychological Rev.* **1899**, 6, 241



Kanizsa figures

Kanizsa, G. *Ital. J. Psychol.* **1974**, 1, 93

Kanizsa, G. *Sci. Amer.* **1976**, 234, 48



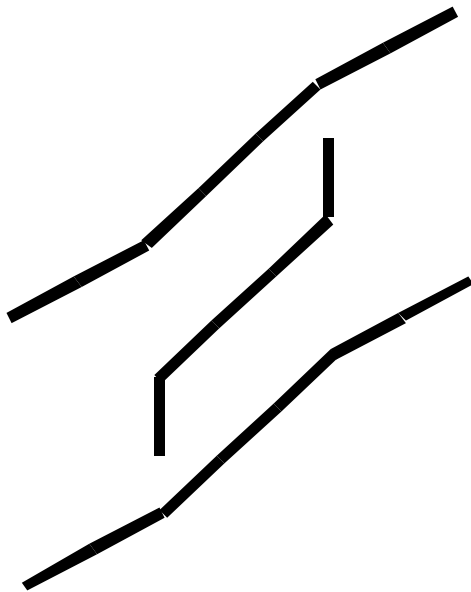
Kinetic depth effect

Wallach, H.; O'Connell, D.N. *J. Exp. Psychol.* **1953**, 45, 205

Lipps illusion (1897)

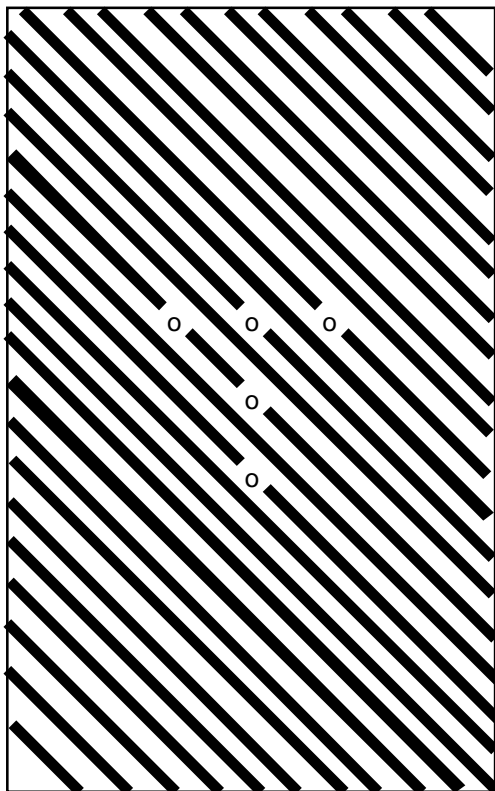
Lipps, T. *Z. Psychol.* **1896**, 12, 39; 275

Lipps, T. *Z. Psychol.* **1898**, 18, 405



Luckiesh-Moss figure

Luckiesh, M.; Moss, F.K. *Am. J. Psychol.* **1933**, 45, 135

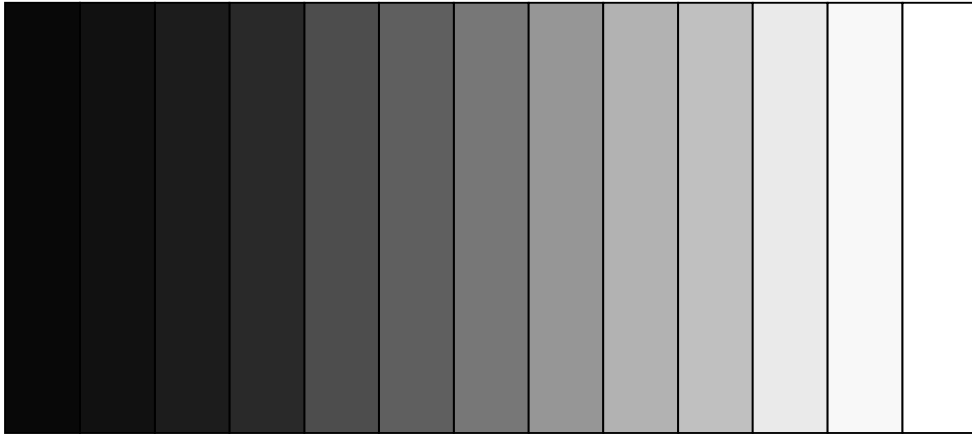


Mach bands

Mach, E. *Phil. Mag.* **1865**, 30[4], 319

Mach, E. *Archiv. Anatomie, Physiologie, u. Wissensch. Medicin*, **1865**, 629

Mach, E. *Sitzungsber. Akad. Wissen. Wien* **1866**, 54(Abt. 2), 131; 393
Mach, E. *Sitzungsber. Akad. Wissen. Wien* **1868**, 57(Abt. 2), 11
Mach, E. *Sitzungsber. Akad. Wissen. Wien* **1906**, 115(Abt. 2a), 633

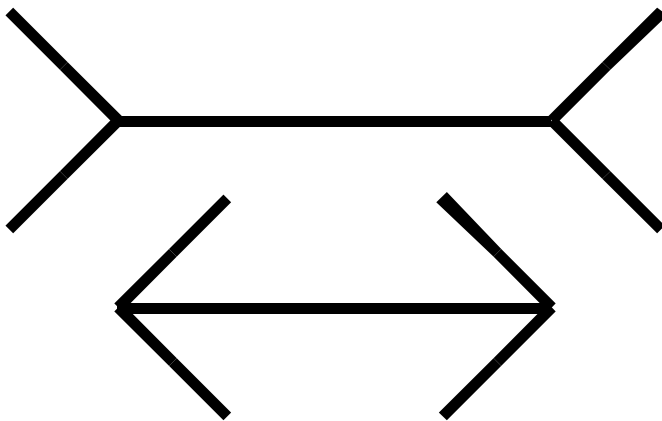


Müller-Lyer illusion

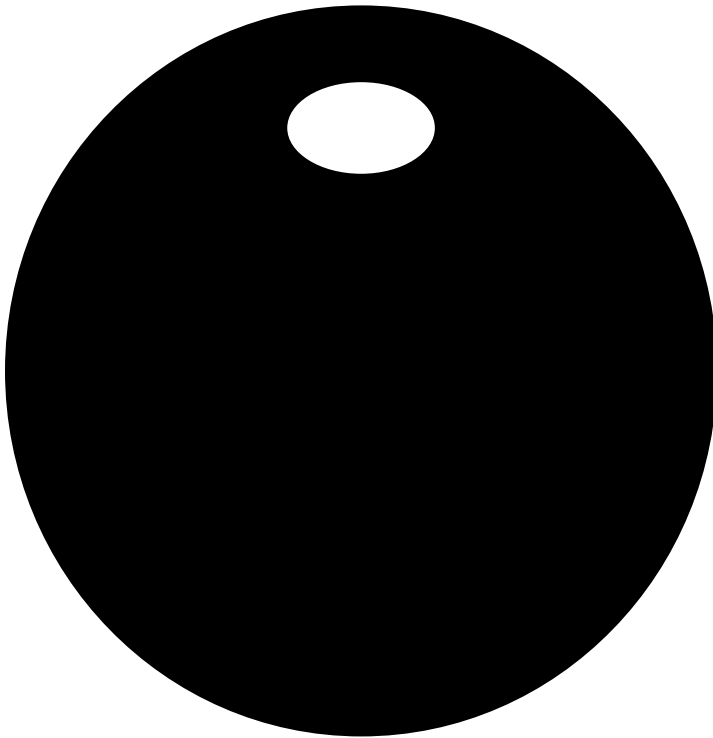
Müller-Lyer, F.C. *Arch. Anatomie u. Physiol. Physiologische Abt. 2 (Suppl.)* **1889**, 263

Müller-Lyer, F.C. *Z. Psychol.* **1896**, 9, 1

Day, R.H.; Knuth, H. (transl.) *Perception* **1981**, 10, 126

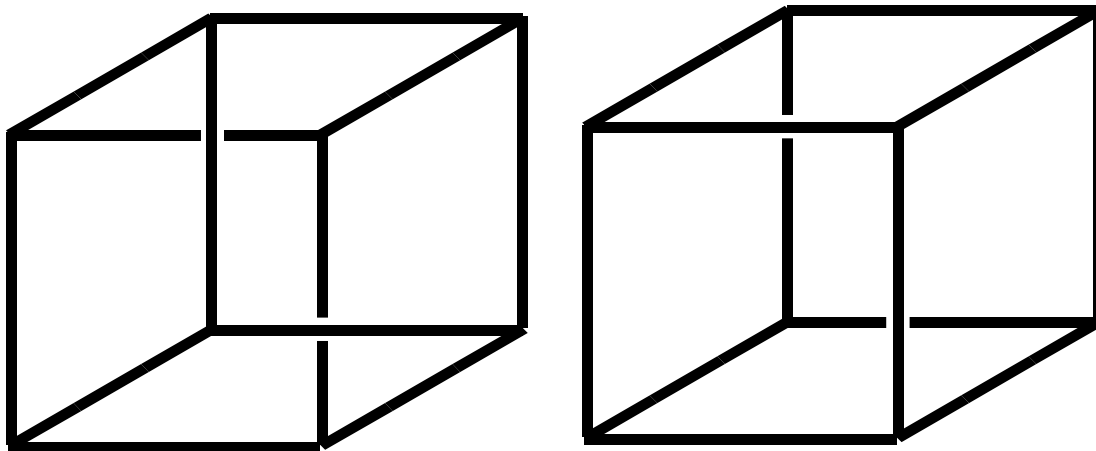


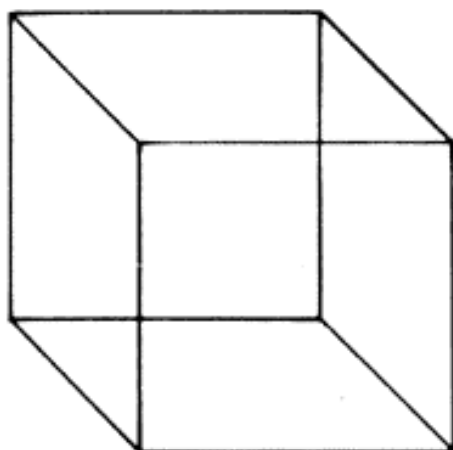
Musatti's figure (stereokinetic effects) (1924)



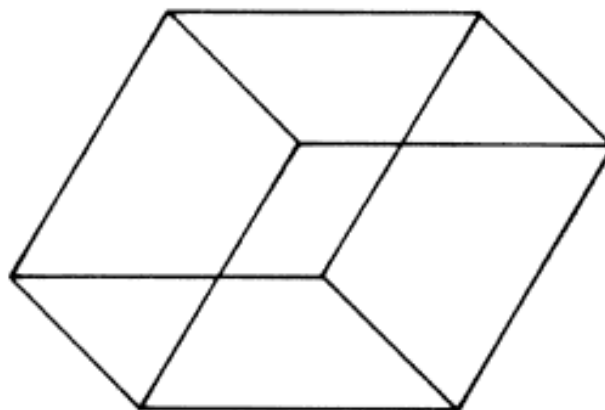
Necker cube

Necker, L.A. *Phil. Mag.* **1832**, 1[3], 329





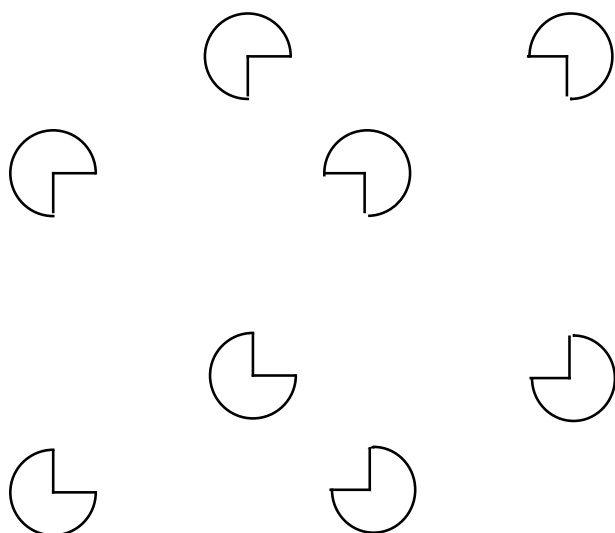
(a)



(b)

Phantom Necker cube

Bradley, D.R.; Petry, H.M. *Am. J. Psychol.* **1977**, 90, 253



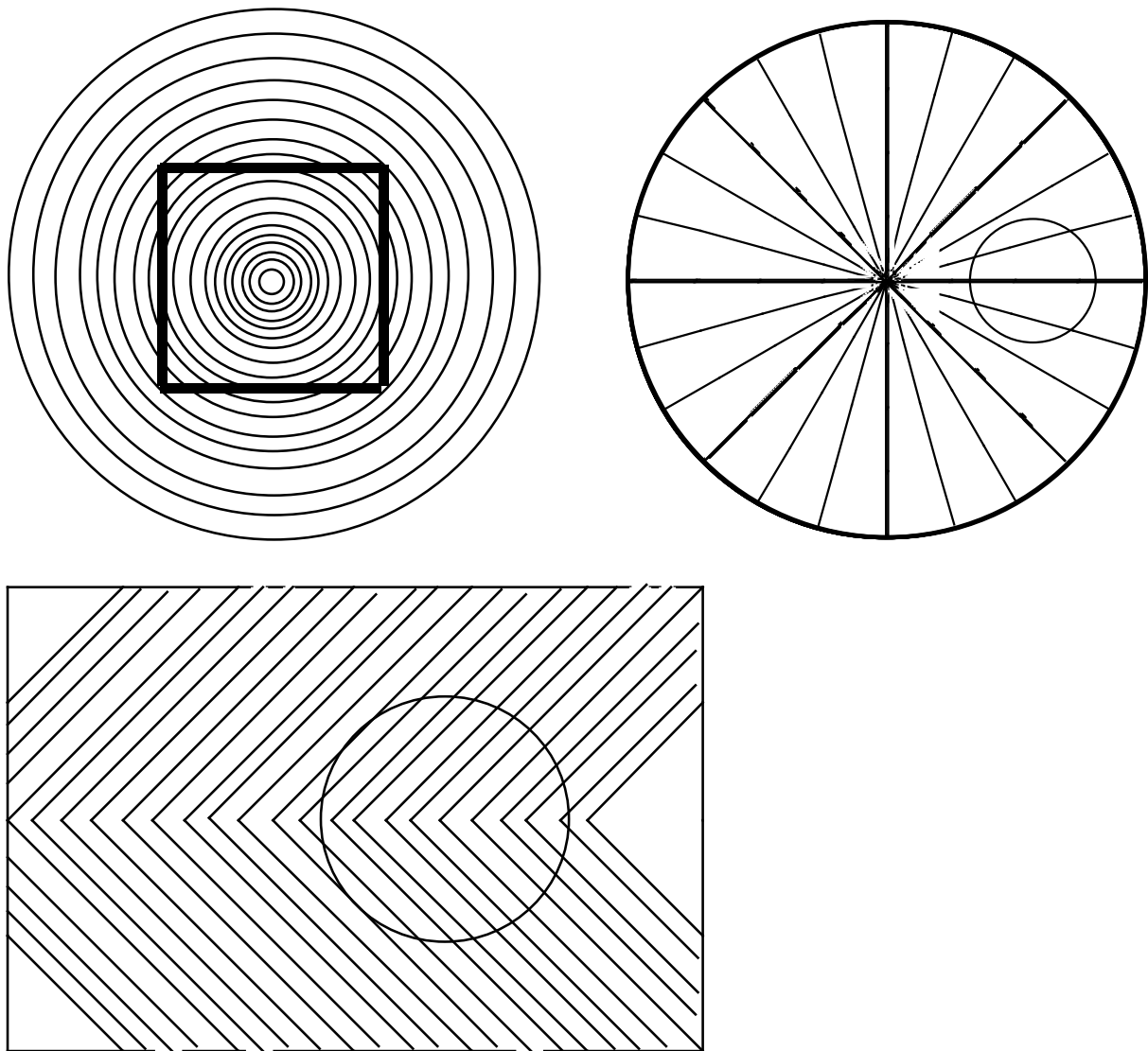
Oppel-Kundt illusion (1854)

Kundt, A. *Ann. Physik* **1863**, 120, 118



Orbison illusion

Orbison, W.D. *Am. J. Psychol.* **1939**, 52, 31



Parks effect (passing a camel through the eye of a needle)

Parks, T.E. *Am. J. Psychol.* **1965**, 78, 145

Rock, I.; Halper, F. *Am. J. Psychol.* **1969**, 82, 425

Phénakistoscope

Plateau, J. *Correspondance Mathématique et Physique*, **1832**, 7, 288; 365

Poggendorff illusion

Burmester, E. *Z. Psychologie* **1896**, 12, 355

Gillman, B. *Perception and Psychophysics* **1971**, 10, 211

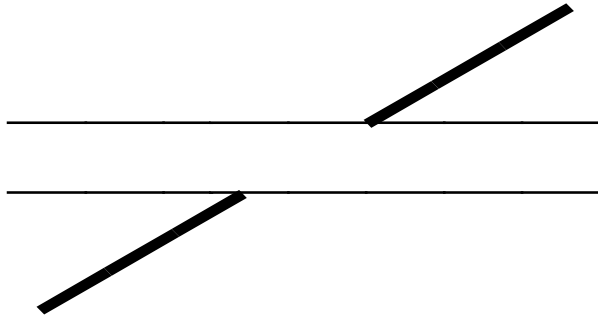
Weintraub, D.J.; Krantz, D.H. *Perception and Psychophysics* **1971**, 10, 257

Goldstein, M.B.; Weintraub, D.J. *Perception and Psychophysics* **1972**, 11, 353

Day, R.H. *Quart. J. Exp. Psychol.* **1973**, 25, 535

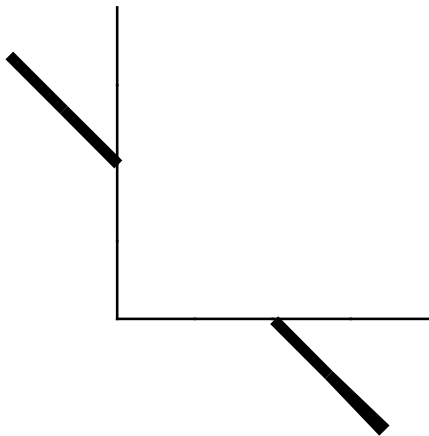
Day, R.H.; Dickenson, R.G. *Brit. J. Psychol.* **1976**, 67, 537

Gillam, B. *Sci. Amer.* **1980**, 242(Jan.), 102

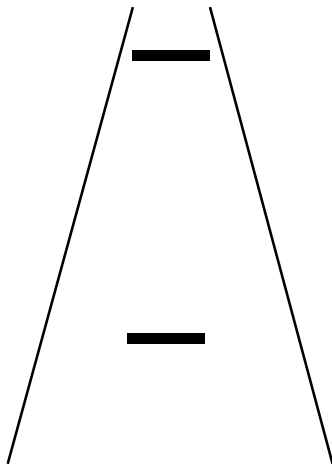


Corner Poggendorff illusion

Greene, E. *Perception* **1988**, 17, 65



Ponzo illusion (1913)



Prevost-Fechner-Benham subjective colours

Prevost, B. *Mémoire de la Société de Physique et d'Histoire naturelle de Genève* **1823 - 1826**, 3, 121

Fechner, G.T. *Ann. Physik u. Chem.* **1838**, 232, 227

Cohen, J.; Gordon, D.A. *Psychological Bull.* **1949**, 46, 97

Pulfrich's amazing pendulum

Pulfrich, C. *Naturwissen.* **1921**, 10, 553

Lit, A. *Am. J. Psychol.* **1949**, 62, 159

Enright, J.T. *Am. Scientist* **1970**, 58, 536

Walker, J. *Sci. Amer.* **1978**, 238, 142

Richards disk

Richards, W. *Perception and Motor Skills* , **1968**, 27, 1169

Rotating black and white disk patterns producing subjective colours

Bagley disk

Bagley, F.W. (Miss) *Am. J. Psychol.* **1902**, 13, 488

Baumann disk

Baumann, C. *Pflügers Archiv. ges. Physiol.* **1912**, 146, 543

Benham top

Benham, C.E. *Nature* **1894**, 51, 200

Benham, C.E. *Nature* **1895**, 52, 321

Bidwell disk

Bidwell, S. *Proc. Roy. Soc. London* **1896**, 60, 368

Bidwell, S. *Proc. Roy. Soc. London* **1897**, 61, 268

Brücke disk

Brücke, W. *Sitzungsber. Math. Naturwiss. Classe d. Kaiserlichen Akad. Wissensch.* **1864**, 49[Abt. 2], 128

Colenbrander disk

Colenbrander, M.C. *Acta ophthal. Kbh.* **1933**, 11, 437

Doniselli disk

Doniselli, C. *Arch. Fisiol.* **1907**, 4, 561

Dove disk

Dove, H.W. *Ann. Physik u Chem.* **1848**, 85, 526

Dove, H.W. *Darstellung der Farbenlehre und Optische Studien*, G.W.F. Müller: Berlin, 1853

Edridge-Green disk

Edridge-Green, F.W. *J. Physiol.* **1915 - 1916**, 50, xi

Fechner disk

Fechner, G.T. *Ann. Physik u. Chem.* **1838**, 232, 227

Finnegan and Moore disk

Finnegan, J.M.; Moore, B. *Nature* **1895**, 51, 292

Helmholtz disk

Helmholtz, H. von *Handbuch der physiologischen Optik*, Voss: Hamburg, 1866

Helmholtz, H. von *Treatise on Physiological Optics*, (translated) Dover: New York, 1962

Hurst disk

Hurst, C.H. *Nature* **1895**, 52, 510

Kormann disk

Kormann, F. *Z. Sinnphysiol.* **1931**, 62, 158

Rood disk

Rood, O.N. *Am. J. Sci. & Arts* **1860**, 30[2], 182

Rood, O.N. *Am. J. Sci. & Arts* **1861**, 31[2], 417

Smith disk

Smith, J. *Rep. Brit. Ass. Adv. Sci. (Notices and Abstracts)* **1859**, 29, 22

Smith, J. *Am. J. Sci. & Arts* **1860**, 29[2], 276

Wolf disk

Wolf *Sci. Amer.* **1895**, 72, 309

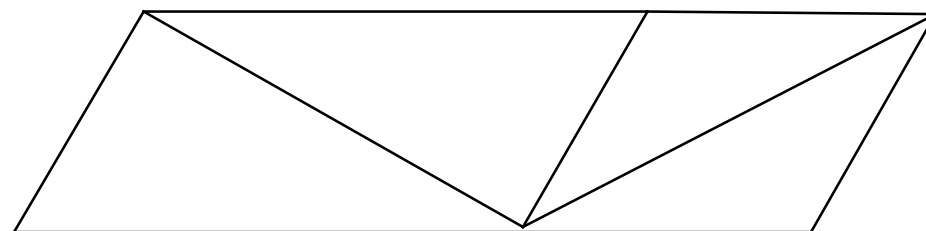
Rubin figure

Rubin, E. *Synoplevede Figurer*, Gyldendalske: Copenhagen, 1915

Rubin, E. *Visuelle wahrgenommene Figuren*, Gyldendalske: Copenhagen, 1921

**Sander's parallelogram**

Sander, F. *Neue Psychol. Studien* **1931**, 8, 311

**Simultaneous colour contrast**

Chevreul, M. *De la loi du contraste simultanées couleurs et l'assortiment des objets colorés*, Paris, 1839

Martel, Charles (transl.) *The Principles of Harmony and Contrast of Colours and Their Applications to the Arts*, London, 1854 (1st ed.); 1872 (3rd ed.)

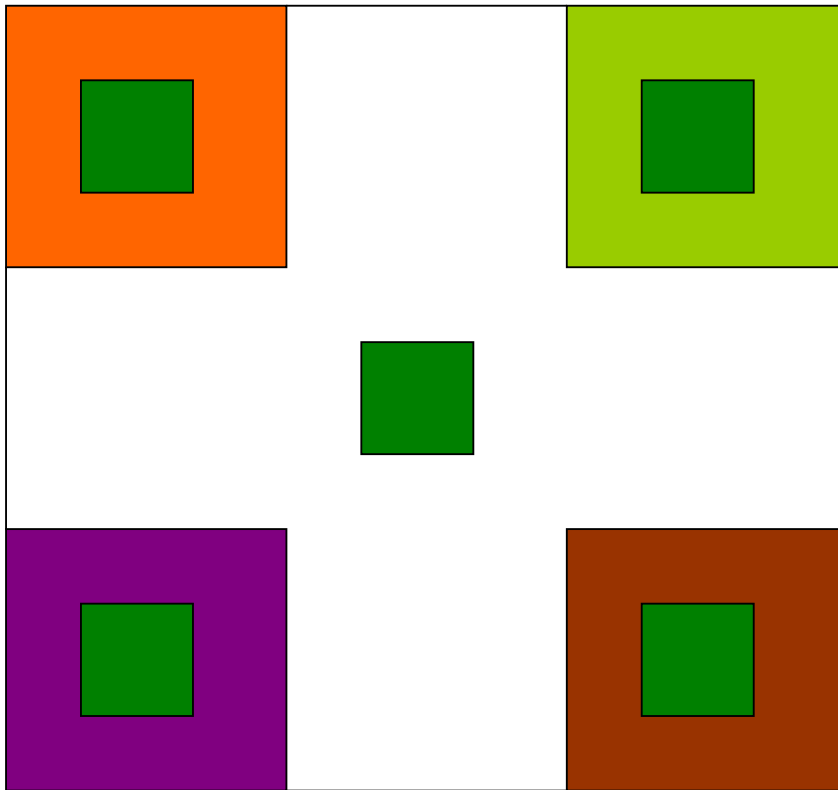
Spranton, John (transl.) *The Laws of Contrast of Colour*, London, 1858

Chevreul, M. *Mem. l'Acad. Sci.* **1832**, 11, 447

Chevreul, M. *Compt. Rend.* **1858**, 47, 196

Chevreul, M. *Compt. Rend.* **1863**, 57, 713

Chevreul, M. *Compt. Rend.* **1864**, 58, 100



Stroboscope

Stampfer, S. *Jahrb. Polytechn. Inst. Wien* **1834**, 18, 237

"Thatcher" illusion

Thompson, P. *Perception*, **1980**, 9, 483



Wagon wheel effect

Quigley, M. *Magic Shadows: the story of the origin of motion pictures*, Biblo & Tannen: New York, 1969

Kaufman, L.; Cyrulnick, I.; Kaplowitz, J.; Melnick, G.; Stof, D. *Psychologische Forschung* **1971**, 34, 343

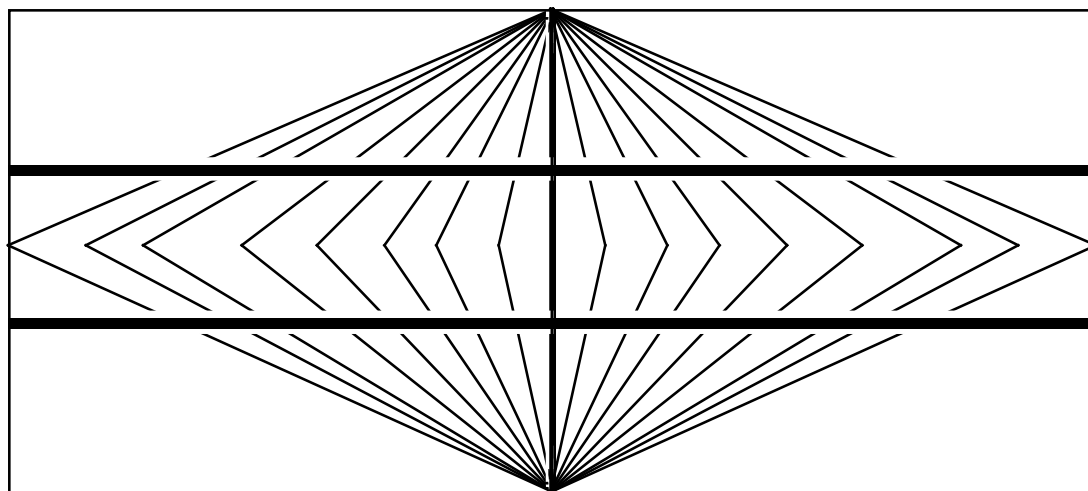
Kaufman, L. *Sight and Mind*, Oxford University Press: New York, 1974

Waterfall illusion

Addams, R. *Phil. Mag.* **1834**, 5[3], 373

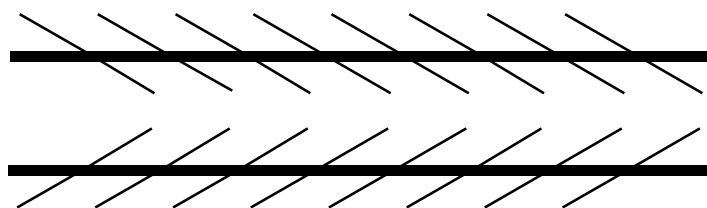
Wundt illusion

Wundt, W. *Gesell. Wiss. Math. Phys. Abh. Leipzig* **1898**, 24, 53



Zöllner's illusion

Zollner, F. *Ann. Physik* **1860**, 110, 550



General references on optical illusions:

1. Fineman, Mark *The Inquisitive Eye*, Oxford University Press: New York, 1981
2. Fineman, Mark *The Nature of Visual Illusion*, Dover: New York, 1996
3. Gregory, R.L. *Eye and Brain : the psychology of seeing*, McGraw-Hill: New York, 1997
4. Gregory, R.L. (ed.) *The Oxford Companion to the Mind*, Oxford University Press: Oxford, 1987
5. Luckiesh, M. *Visual Illusions: their causes, characteristics, and applications*, Dover: New York, 1965
6. Robinson, J.O. *The Psychology of Visual Illusion*, Dover: New York, 1998
7. Seckel, A. *The Art of Optical Illusions*, Carleton Books: , 2000
8. Seckel, A. *More Optical Illusions*, Carleton Books: , 2002

Dr. John Andraos, <http://www.careerchem.com/NAMED/Optical-Illusions.pdf>

19

9. Shepard, R.N. *Mind Sights*, W.H. Freeman: , 1990

10. Tolansky, S. *Optical Illusions*, Pergamon Press: New York, 1964

Biographical information

SCIENTIST	DATES	BIRTHPLACE	DEGREE	LOCATION	MENTOR/ADVISOR	REF
ADDAMS, R.						
AMES, ADELBERT JR.	18.02.1880 - ?	Lowell, Massachusetts, USA	1903 AB	HARVARD		1
BAGLEY, FLORENCE WINGER	07.01.1874 - 1952	Clay Lick, Pennsylvania, USA	1898 AM	NEBRASKA		2
BAUMANN, C.						
BENHAM, CHARLES E.						
BENUSSI, VITTORIO	17.01.1878 - 24.11.1927	Trieste, Italy	1901	GRAZ	MEINONG, ALEXIUS VON	3
BEZOLD, WILHELM VON	21.06.1837 - 17.02.1907	Munich, Germany				4
BIDWELL, SHELFORD	06.03.1848 - 18.12.1909	Thetford, Norfolk, England		CAMBRIDGE		5,6
BRUECKE, ERNST WILHELM VON	06.09.1819 - 07.01.1892	Berlin, Germany	1842 (MD)	BERLIN	MUELLER, JOHANNES	7
CHEVREUL, MICHEL EUGENE	31.08.1786 - 09.04.1889	Angers, France	1803+	MUSEUM D'HISTOIRE NATURELLE	VAUQUELIN, NICOLAS	7
COLENBRANDER, M.C.						
CORNSWEET, TOM N.	29.04.1929 -	Cleveland, Ohio, USA	1955	BROWN		8
CRAIK, KENNETH J.W.	1914 - 07.05.1945	Edinburgh (?), Scotland	1940	CAMBRIDGE	BARTLETT, SIR FREDERIC C.	5,9
DELBOEUF, JOSEPH REMI L.	01.10.1831 - 14.08.1896	Liege, Belgium	1855	LIEGE	UEBERWEG, FRIEDRICH (BONN)	10
DONISELLI, CASIMIRO						

DOVE, HEINRICH WILHELM	06.10.1803 - 04.04.1879	Liegnitz (now Legnica), Poland	1829?	KOENIGSBERG		11
DUCHAMP, MARCEL	28.07.1887 - 01.10.1968	Blainville, France				12
EBBINGHAUS, HERMANN	25.01.1850 - 26.02.1909	Barmen, Wuppertal, Germany	1873	BONN		13
EDRIDGE-GREEN, FREDERICK W.	14.12.1863 - 17.04.1953	London, England	1889 (MD)	DURHAM		14
EHRENSTEIN, WALTER	10.10.1899 - 16.10.1961	Altenkirchen, Rhineland, Germany		FRANKFURT	SCHUMANN, FRIEDRICH	32
EMMERT, E.						
FECHNER, GUSTAV THEODOR	19.04.1801 - 18.11.1887	Gross-Saerchen, Germany	MD	LEIPZIG ?		15,16
FICK, ADOLPH EUGEN	03.09.1829 - 21.08.1901	Kassel, Germany	1851 (MD)	MARBURG; ZURICH	LUDWIG, CARL	7
FINNEGAN, J.M.						
FRASER, JAMES						
GREGORY, RICHARD L.	23.07.1923 -	England	1954 MA	CAMBRIDGE		17
HELMHOLTZ, HERMANN VONN	31.08.1821 - 08.09.1894	Potsdam, Germany	1842 (MD)	BERLIN	MUELLER, JOHANNES	7
HERING, KARL EWALD K.	05.08.1834 - 29.01.1918	Alt-Gersdorf, Germany	1860? (MD)	LEIPZIG	FECHNER, G.T.	7
HERMANN, LUDIMAR	21.10.1838 - 05.06.1914	Berlin, Germany	1859 (MD)	BERLIN		18
HURST, C. HERBERT						
JASTROW, JOSEPH	30.01.1863 - 08.01.1944	Warsaw, Poland	1886	JOHNS HOPKINS		1,4
JUDD, CHARLES HUBBARD	20.02.1873 - 18.07.1946	Bareilly, British India	1896	LEIPZIG		1,4
KANIZSA, GAETANO						
KORMANN, F.						
KUNDT, AUGUST	18.11.1838 -	Schwerin, Germany	1864	BERLIN	MAGNUS, GUSTAV	7,19

	21.05.1894					
LIPPS, THEODOR	28.07.1851 - 17.10.1914	Wallhalben, Germany				4
LUCKIESH, MATTHEW	14.09.1883 - ?	Maquoketa, Iowa, USA	1912 (elec. eng.)	IOWA		1
MACH, ERNST	18.02.1838 - 19.02.1916	Chirlitz-Turas, Czechoslovakia	1860	VIENNA	ETTINGSHAUSEN, ANDREAS VON	7
MOORE, B.						
MOSS, FRANK KENDALL	24.07.1898 - ?	Denver, Colorado, USA	1926 (elec. eng.)	COLORADO		1
MUELLER-LYER, FRANZ CARL	1857 - 1916	Baden-Baden, Germany	1880 MD	STRASBOURG		20
MUSATTI, CESARE L.						
NECKER, LOUIS- ALBERT	10.04.1786 - 20.11.1861	Geneva, Switzerland	1806+	EDINBURGH		7
O'BRIEN, VIVIAN	01.02.1924 -	Baltimore, Maryland, USA	1960	JOHNS HOPKINS		8
OPPEL, JOHANN JOSEPH	23.06.1815 - 27.04.1894	Frankfurt, Germany		FRANKFURT ?		21
ORBISON, WILLIAM DILLARD			1945	YALE		29
PARKS, THEODORE ELLIOTT			1964	WISCONSIN		29
PENROSE, LIONEL SHARPLES	11.06.1898 - 12.05.1972	London, England	1930 MD	CAMBRIDGE	RUSSELL, BERTRAND; BARTLETT, F.C.; BUHLER, E. (VIENNA)	23
PENROSE, ROGER	08.08.1931 -	Colchester, Essex	1957	LONDON	TODD, JOHN ARTHUR	17,24

PLATEAU, JOSEPH ANTOINE F.	14.10.1801 - 15.09.1883	Brussels, Belgium	1829	LIEGE		7
POGGENDORFF, JOHANN C.	29.12.1796 - 24.01.1877	Hamburg, Germany	1820s	BERLIN		7
PONZO, MARIO	1882 - 1960					31
PREVOST, BENEDICT						
PULFRICH, CARL	24.09.1858 - 12.08.1927	Straesschen, Germany	1882	BONN	CLAUSIUS, RUDOLF	7
RICHARDS, WHITMAN			1965	MIT	TEUBER, H.L.	29,30
ROOD, OGDEN NICHOLAS	03.02.1831 - 1902	Danbury, Connecticut, USA	1852	PRINCETON		4
RUBIN, EDGAR	1886 - 1951	Copenhagen, Denmark		COPENHAGEN	HOEFFDING, HAROLD; LEHMANN, ALFRED; MUELLER, G.E. (GOETTINGEN)	5
SANDER, F.						
SMITH, JOHN						
STAMPFER, SIMON RITTER VON	28.09.1792 - 10.11.1864	Windisch-Matrey, Switzerland				25
TITCHENER, EDWARD BRADFORD	11.01.1867 - 03.08.1927	Chichester, England	1892	LEIPZIG	WUNDT, WILHELM	5,26
WHEATSTONE, CHARLES	06.02.1802 - 19.10.1875	Gloucester, England	N/A	ENGLAND (self taught)		7
WUNDT, WILHELM	16.08.1832 - 31.08.1920	Neckarau, Germany	1856 (MD)	HEIDELBERG; BERLIN	MUELLER, JOHANNES	7, 27
ZOELLNER, FRIEDRICH	08.11.1834 - 25.04.1882	Berlin, Germany	1859	BASEL		28

1. Cattell, J.M.; Catell, J. *American Men of Science*, 6th ed., The Science Press: New York, 1938
2. Ogilvie, Marilyn; Harvey, Joy (eds.) *The Biographical Dictionary of Women in Science*, Routledge: New York, 2000
3. Albertazzi, L. <http://www.mittleeuropafoundation.it/Papers/LA/Vittorio%20Benussi.pdf> (accessed October 2003)

4. Debus, Allen G. (ed.) *World Who's Who in Science: A Biographical Dictionary of Notable Scientists from Antiquity to the Present*, 1st ed., Marquis-Who's Who, Inc.: Hannibal: Missouri, 1968.
5. Gregory, R.L. (ed.) *The Oxford Companion to the Mind*, Oxford University Press: Oxford, 1987
6. *List of Fellows of the Royal Society 1660 - 1998*, The Royal Society: London, 1999
7. Gillispie, Charles Coulston (ed.), *Dictionary of Scientific Biography*, Charles Scribner & Sons: New York, 1980.
8. *American Men of Science: Physical and Biological Sciences*, 11th ed., R.R. Bowker: Providence, N.J., 1967.
9. Bartlett, F.C. *Brit. J. Psychol.* **1946**, 36, 109
10. Nicolas, S.; Murray, D.J.; Farahmand, B. *Perception* **1997**, 26, 1297
11. *Pogg.* 1, 597; 3, 375
12. Moritz, C. (ed.) *Current Biography* **1960**, 123; **1968**, 454
13. Shakow, D. *Am. J. Psychol.* **1930**, 42, 505
14. *Pogg.* 6(1), 638; 7B(2), 1194
15. Daintith, John; Mitchell, Sarah; Tootill, Elizabeth; Gjersten, Derek, *Biographical Encyclopedia of Scientists*, Institute of Physics Publishing: Bristol, UK, 1994.
16. *Pogg.* 1, 728; 3, 433
17. *Who's Who 2003: an annual biographical dictionary*, A & C Black: London, 2003
18. *Pogg.* 3, 623; 4, 623; 5, 524
19. *Pogg.* 4, 818; 5, 692
20. Day, R.H.; Knuth, H. *Perception* **1981**, 10, 126
21. *Pogg.* 2, 328; 3, 987
22. *R.R. Bowker's American Men & Women of Science 1998 - 99*, 20th ed., R.R. Bowker: New Providence, New Jersey, 1998.
23. Harris, H. *Biog. Memoirs Fellows Roy. Soc.* **1973**, 19, 521
24. School of Mathematics and Statistics, University of St. Andrews, Scotland, *Index of Biographies*, <http://www-groups.dcs.st-and.ac.uk/~history/BiogIndex.html>
25. *Pogg.* 2, 983; 3, 1281
26. Boring, E.G. *Am. J. Psychol.* **1927**, 38, 489

27. *Pogg.* 4, 1674; 5, 1397

28. *Pogg.* 2, 1418; 3, 1488; 4, 169

29. *Dissertation Abstracts International Database* (accessible from Steacie Science Library, York University)

30. Massachusetts Institute of Technology Library, <http://libraries.mit.edu/services/barton.html>

31. Coleman, Andrew M. *A Dictionary of Psychology*, Oxford University Press: Oxford, 2001

32. Private communication, Walter H. Ehrenstein, Leibniz Research Center for Human Factors , January 26, 2004